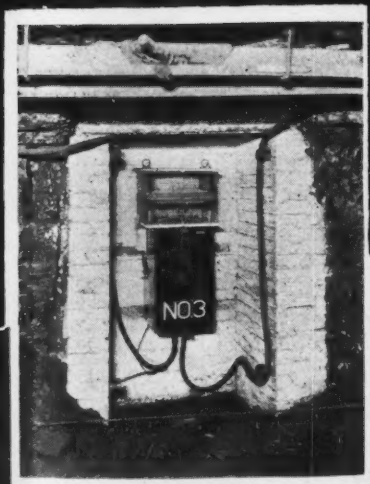
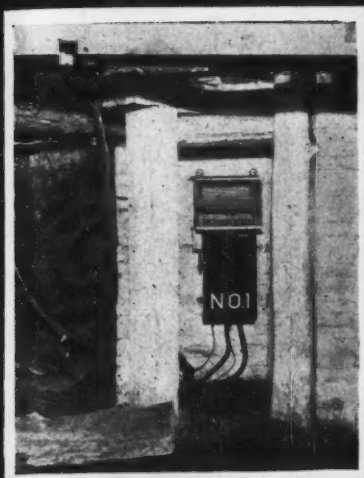


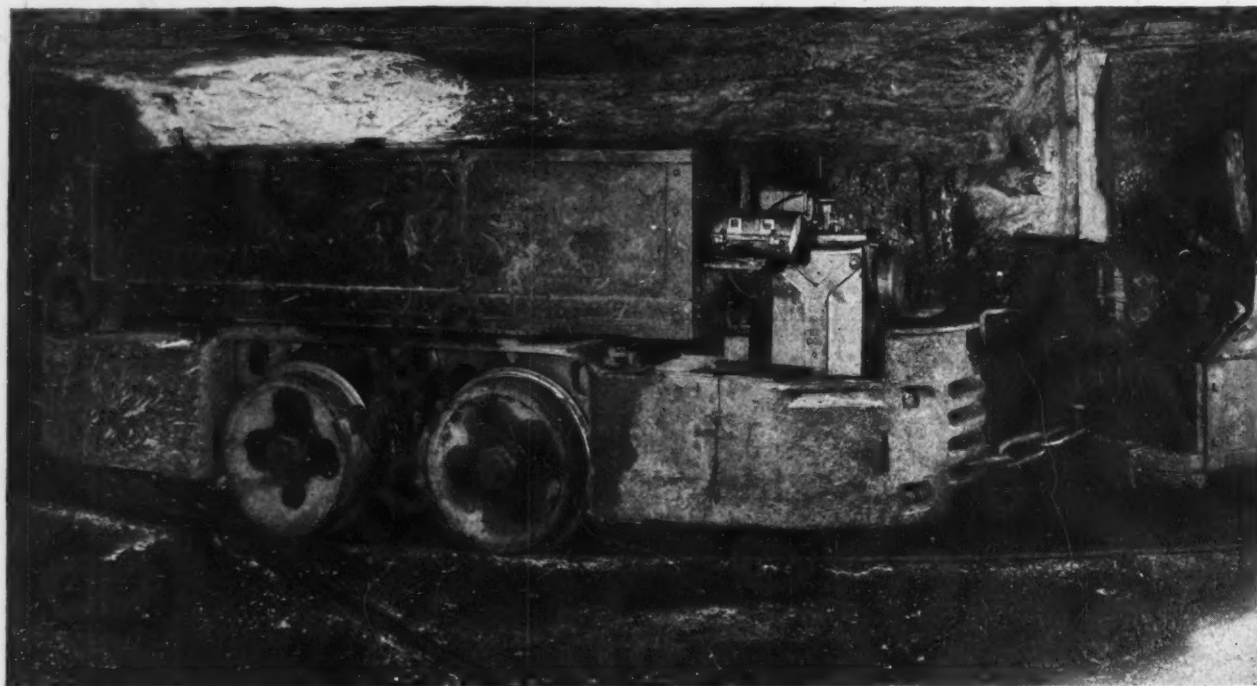
# CATALOG

McGraw-Hill Co., Inc.

September 3, 1925

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One of the Exide-Ironclad-equipped motors at Standard Moshannon Coal Co., Clearfield, Pa., referred to by Mr. W. J. Williams, Superintendent

# Pulling 52 loaded cars up a MILE-LONG GRADE

DO brakemen have to underload haulage motors because of one or two steep grades in your mine?

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\* \* \* \*

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# COAL AGE

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## Island Creek!

WHERE IS THERE a coal mining company that *always* keeps its operations running? That *always* has buyers waiting for its output? That *always* declares dividends? Ask these three questions of any coal man and his first answer is: "Island Creek." For years this Logan County, West Virginia organization has worn a halo in the estimation of the industry generally. Annual statements have placed it there. There must be a reason. Next week's issue of *Coal Age*—Island Creek issue—will bring you the answer.

THE SUCCESS of the Island Creek Coal Co. with its subsidiaries controlling 27,000 acres of good coal cannot be attributed entirely to unusually favorable natural conditions. The 6,000,000 tons production which this company is recording in 1925 gives every indication of producing another strong balance sheet partly because the company owning the 12 mines has not allowed itself to become moss-grown since 1902 when oxen hauled needed equipment eight miles over the hills from Dingness, W. Va., to its first mine. It has stuck to the slogan "Modernize" from the first.

AND IT HAS another slogan: "Maintain—and Repairs Will Be Low." So the electrical department, for instance, is divided into alternating current and direct current divisions and somebody representing one or the other inspects every motor, every mining machine and every drill *every week*. Inspection leads to the stitch in time and saves big repair bills, big time losses and costly trouble generally. Every section of every mine is regularly inspected too. Every shop machine is inspected. And everything else is inspected—rigidly. Furthermore, inspection reports go straight to headquarters. It pays. Everything about the Island Creek Coal Co. pays. That is the way the company is organized.

THERE IS A GOOD answer to the old question "What's the matter with the coal industry?" in the big story next week of how Island Creek masters its problems.

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# COAL AGE

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Devoted to the Operating, Technical and Business  
Problems of the Coal-Mining Industry

R. DAWSON HALL  
*Engineering Editor*

Volume 28

NEW YORK, SEPTEMBER 3, 1925

Number 10

## The Public and the Anthracite Strike

THE SILENCE OF SUSPENSION has settled down upon the anthracite mining districts of northeastern Pennsylvania. The frantic peace efforts of the business men of the region, who must become the unwilling financiers of the contest, have gone the way of the conciliatory words of the producers put forth after President John L. Lewis of the United Mine Workers had returned to Atlantic City in a thunder of ultimatums. Barring intervention, victory is promised to the side with the longest purse and the greatest endurance—and the odds, under such conditions, are not chalked up against the miners at the figure the public commonly thinks.

A shrewder psychologist than his opponents, Mr. Lewis was quick to seize the opportunity to use the efforts of the committee which he had insulted in his first comments on the activities of the business men as a medium for the promulgation of some effective propaganda designed to rehabilitate the union cause in the public eye. The operators, displaying more intellectual honesty than finesse, passed by the opportunity to reply to Mr. Lewis in kind. The union leader was left dictating terms of resumption which the operators could accept only with their tongues in their cheeks and they could not bring themselves to reopen negotiations on a basis of hypocrisy.

Although the public now moans that the miners and the operators have completely disregarded its interests in the controversy, the fact is that the public, by its earlier inaction, has definitely stated its position. The operators entered the wage conferences with two announced objectives—arbitration of all questions upon which the conferees could reach no agreement so that a suspension might be avoided and opposition to any changes which would increase the cost of coal to the consumer. To neither proposal would the miners give their assent. To the first proposal they voiced a most vigorous, not to say bitter, dissent. After trotting out a few old friends, such as freight rates, profits and the hazards of the industry, the miners made it plain that they would not agree to the stopping of the steady advance of wages.

The public was frankly enamoured with the proposal to check increases in fuel prices. It seemed, for the most part, strangely indifferent to the suggestion to avoid a suspension. Its attitude, reflected in the nonchalance in evidence at Washington and Swampscott, was one of "let 'em fight it out; we should worry." When the public and the administration might have thrown the weight of their influence on the side of arbitration as public protection against an interruption to the production of hard coal, both were silent.

Since the public, in the weeks during which the operators and miners were meeting at Atlantic City elected to adopt a "hands off" policy, the industry today has the right to demand that the public and the administration at Washington continue that policy of non-

interference. The pressure that in times past has compelled the operators to agree to settlements framed in a spirit of fear should not be exerted. Friendly offices, of course, are always in order, but the public has surrendered whatever right it may have had to dictate terms. A sense of fair play should keep Washington as calm when excited New England Congressmen descend upon it with the cry of "peace at any price" as it is today. The public acted as if it knew what it wanted: let it not later complain of the bargain.

## Don't Hamstring the Bureau of Mines

THE LONG DELAY in choosing a director for the Bureau of Mines has created a situation in Washington that merits some attention from the coal industry. The proposal has been put forth that this bureau and the Bureau of Standards be directed by the same executive. Opposition to this should rise at once from men and organizations interested in coal. The Bureau of Standards is a laboratory engaged largely in experiments of a physical or chemical character. Some of these experiments have a direct application to mining but these are by no means the controlling activities of the Bureau.

The Bureau of Mines is performing and must continue to perform a valuable service to the coal industry as well as to other industrial groups whose business interests are bound up with the nation's mineral resources, and it certainly should not be made subservient to or dominated by any other government bureau. The industry should make it clear to everybody in Washington that it has little patience with bureau rivalry or personal ambitions.

An opportunity now exists to centralize the mining activities of the federal government where there is a good chance to have it made a grand division of a department with recognition of mining in the department's title. Now that it is settled that the Bureau of Mines is to be under the jurisdiction of a friendly secretary, it is felt that the industry has everything to gain and nothing to lose by strengthening and building up its service.

## Time to Make Repairs

NOW THAT THE anthracite industry is shut down, many opportunities are presented for improvements. When things are going strong little time is available for planning changes which will result in better operation, but during a suspension the officials and engineers will have a chance to look around and survey the properties with this idea in mind.

Some will say that these men will be supervising the care of pumps, hoists, etc. or keeping the important equipment in repair and thus will find little time to do constructive work. However, isn't this an occasion to plan for the future? These men will now be out in the field where they will be able to obtain for themselves

first-hand information of the conditions surrounding the places and systems that should be improved.

But aside from these men there are always many others who can be employed repairing apparatus which, during the great push before the suspension, was taxed up to or even beyond its limit. Even in the ordinary work of taking care of equipment during the suspension, occasions will be found to do the work better and thus put the equipment in good condition for resumption of activities. For example, a storage battery on a locomotive rarely receives proper attention during operating periods, but now it can be replenished with acid and charged so as to bring it back to good condition. Then again, consider the mine locomotives: nearly every one of them has something that should be repaired; headlights, brake shoes and bearings could all be repaired or at least adjusted.

With the resumption of work, regardless of the results of the present wage controversy, the mines must in future be operated so as to keep the selling price of coal as low as possible. Therefore, the day has arrived to take time by the forelock.

### Make Haste Slowly

OF ALL REVEALING things few are more interesting than the slow "movie" that shows us motions slowed down to meet the imperfections of the human eye. Those motions could not in most cases be duplicated at such speed. Gravity and muscular effort work more rapidly, so that the screen picture is an impossible one.

This furnishes an illustration in the art of modern mining. A few companies are trying to test roof action with certain specific conditions of operation and are using the ordinary slow methods of loading coal in order that they may discover what will be the roof action with those same conditions and with more rapid loading methods. But with such experiments they can get only misleading results. The slow "movie" represents nothing truly. Something essentially different would happen if we tried to imitate those motions at such slow speed. Similarly the roof undermined slowly will not act as it would if speedily undermined.

Nothing is more certain than that roof action is complicated in the extreme. It is a progressive series of movements, and they take place in a serial order. One action must wait for another and all of them take a certain length of time. This is no theory. Experience has shown that speed in operation modifies roof action profoundly and what would be a failure with slow extraction is a complete success when coal is removed with speed.

### Personnel Building

OPPORTUNITIES for improving the personnel at the mines are offered by these lean times in industry, and they should be used whenever possible. Men who are habitual risk takers, should be let out of the organization. The bootlegger, the man who is a bad citizen or who has a record for working short time should be dropped when any men are let out.

An industry is no better than its personnel. A business that has the record of having rough characters working in it does not stand well with the public. If the coal industry had a better class of miners, the operators would be in better favor and have fewer strikes. Some men may argue that they will get more coal from

roughnecks than from men with less of fire in their blood, but those who act on that principle will find before long that all their men will be of that class.

Selective employment is the basis of success. A big burly, rough man may be a good tonnage producer, but he may, nevertheless, destroy the morale of the personnel and so be of more harm than good. When a man finds that standing to order is necessary to retain his job in a mining village he will straighten up and the town will be made endurable to the peaceable citizen and his wife. If the roughneck finds the atmosphere restraining and displeasing let him take the open road. The coal industry is judged by the men it hires and by their wives and families.

### Soft Coal's Job

THERE IS A CERTAIN pleasure in turning from Anthracite's troubles to a contemplation of soft coal's service to the country. The harvest is on. The nation is filling its elevators, its warehouses, its storage yards. It is advancing into the autumn with a confidence born of economic virility. One excellent indication of this condition is found in the most recent Car Service Division report from the American Railway Association.

For the fifth consecutive week, loading of revenue freight exceeded one million cars a week, the total for the week ended Aug. 15 having been 1,064,793 cars. This could mean nothing less than business health for the country. The number of cars loaded with revenue freight up to date this year has exceeded all previous years and the week of Aug. 15 was the greatest week of 1925. It was 111,385 cars in excess of the corresponding week last year and 24,855 cars ahead of 1923.

The movement of coal to market is, of course, important in these figures. Coal loading for the week totaled 190,979 cars which was 45,716 cars greater than the same week a year ago and 1,800 cars over 1923. However, it is not coal alone that swells the freight movement to its unwonted flood. Livestock loadings were 2,153 cars ahead of last year. Less than carload freight totaled 259,210 cars which exceeded last year by 17,272 cars and two years ago by 17,922 cars. Here is a sure indication of business strength. Miscellaneous freight was 33,934 cars ahead of 1924 and 30,308 cars in excess of 1923. And so it goes.

All this heavy flow of the nation's freight is moved by soft coal sold to the railroads at an average price low enough to satisfy anyone barring possibly the hard-boiled railroad coal buyer whose profession it is to be absolutely insatiable. The tremendous volume of manufactures represented by the freight flood was produced with the aid of coal which has been lower in price this summer in proportion to the cost of production than ever before—this week the *Coal Age* national average is but \$2.10 even after the autumn rise had set in. Coal's service deeply effects the whole economic fabric of the land and, for once, coal cannot be petulantly blamed for chaos in industry generally, for there is no chaos.

Soft coal is abundantly available at low cost as the country begins another winter and the railroads are admirably equipped to deliver it. We can only hope that John Lewis' blind lust for combat will not impel him to risk calling his men out of bituminous mines this fall for punitive purposes or for any other reason. Soft coal ought not to be deprived by the miners of its full opportunity to continue serving America.



# Utah Storms Burst Futilely About Meeting of Rocky Mountain Coal Mining Institute

Washouts Do Not Upset Program at Price—Engineers and Executives Discuss Loading Machines, Conveyors, Rock Dust and Other Technical Subjects Important to the Industry

By R. Dawson Hall

Engineering Editor of Coal Age

**T**YPICAL Utah August storms with half-hour floods ruining roads and disrupting railroad service did not stop the summer meeting of the Rocky Mountain Coal Mining Institute at Price, Utah, Aug. 26, 27 and 28. Engineers, executives, and other coal mining men including a good many representatives of machinery and equipment companies assembled in large number and made the town a busy place with their discussions, their dinners and their group goings and comings to nearby mines which have made Carbon County noteworthy in coal production. Rock dusting, machine loading and the use of underground conveyors were the main subjects considered, but these by no means filled the program.

Despite the absence of J. B. Marks, the president, who telegraphed that he could not be present because of extreme pressure of business, the Institute measured this year fully up to its former records, a large crowd having gathered in the Star Theater when the meeting was opened by Benedict Shubart the secretary. George B. Pryde presided. The slides for the paper on "Electric Shotfiring" not having been made and the paper itself having been delayed in the mails, the article by Robert Williams, Jr. could not be presented. A film made by the E. I. duPont de Nemours Co., entitled "The Story of Dynamite" was shown by A. E. Anderson.

J. M. Jennings described the New Hiawatha tipple of the United States Fuel Co. which the Institute planned to visit in the afternoon. During the night the road between Price and Hiawatha had been washed out, but as the weather was propitious in the morning the road commissioners managed to provide an easy detour down into and up out of the arroyo where the washout occurred. The trip to Hiawatha over the desert was pleasantly accomplished but the smiling little village was barely reached when a heavy storm broke. However, the guests were afforded a fine spread in the amusement hall, and after it was over they visited the tipple which is one of the finest in the West.

In the evening the visitors paraded the street from the Savoy Hotel to the Tabernacle of the Latter Day Saints where an informal banquet in the basement of the building was addressed by the mayor of Price and several leading mining men, the entrance to the banquet hall being decorated to look like a mine and the passageways being labeled like its underground workings. On the way one of the distinguished guests was seized and treated to first-aid, the ambulance being requisitioned to carry him to his destination. The evening closed with a ball in the City Hall.

At the morning meeting of Thursday A. W. Dickinson presented an interesting review of the many forms of loading machines, including the Hamilton machine, the Jeffrey entry machine, the O'Toole and McKinley cutting and loading machines, the Thew "S" loader, the



In the Coal Wilds of Utah

Looking down the incline from the Standardville mine in bottom foreground to the town and tipple in the middle ground at the foot of the snowy mountain.

Joy loaders 4, 5 and 6 B.U., the Coloder, the Myers Whalley, the Riley, the Stockley, the Burnell, the Goodman Hydraulic loader, the Goodman types A and B scrapers, the Ace, the MacEachen and the Jeffrey Pitcar loaders. He also gave much information regarding the Movor, Fairmont, Echoff, Link-Belt, and Jeffrey sectional conveyors and the Jeffrey 44-A conveyor loader. Clearances, lengths and power required were given for each loading machine.

Mr. Dickinson then read Glen A. Knox's paper on the operations at the Sweetwater mine of the Gunn-Quealy Coal Co., where conveyors have been used with great success. Modifications of longwall are being used. At first the faces were made at an angle about half way between the strike and pitch, the conveyors proceeding down the pitch as the cutting progressed. Later the faces were made at a similar angle, but the

main conveyors were moved along the strike. Finally the faces were aligned with the pitch, the main conveyors being laid in the direction of the strike.

At the conclusion of Mr. Knox's paper O. G. Sharrer read an interesting account of his experiences with mechanical loaders in central Pennsylvania, describing his early operation of Joy loaders while with the Pennsylvania Coal Co., declaring that there were no particular advantages in a complicated track system as the expense of laying and repairing eats up the profits that might accrue due to greater speed in handling cars. He also described experiments with scrapers where the coal was only 30 in. thick. Difficulties arose because the method of operation could not be modified to suit the scraper, because the mines worked irregularly and because a scale could not be obtained for this type of work. Other tests of the Myers-Whaley and Jeffrey heading machines were described. The V-system of West Virginia did not seem suitable for Pennsylvania conditions, according to Mr. Sharrer.

Mr. Sharrer said that too many men should not be put on the job at first, because if the number is reduced later misunderstandings arise. He declared that it was difficult to use enough water to prevent the creation of excessive dust. In his opinion the haulage problem was not the principal difficulty and that loaders were so erratic in performance that it would not pay to give maximum haulage facilities till it was made clear that the loading equipment would work without delays other than those arising from haulage. With all Mr. Sharrer's criticism he was confident that the future of the machine loader was assured, and that success would be achieved "in the next few years."

In the haste to reach the lunch provided by the Spring Canyon Coal Co., the address by G. A. Murphy, general manager of the company was omitted.

#### DISCUSS MECHANICAL LOADING

In the evening a session was held in the Carbon County High School at which the articles on mechanical loading were exhaustively discussed. Benedict Shubart favored the use of metal conveyors and said that belt conveyors, though much used in England, were almost unknown for face operations in the United States. He regarded the H. C. Frick Coke Co. belt at Colonial Mines as something more than mere main haulage. It corresponded more nearly to railroad transportation and the continued operation of the belt without injury was largely due to the fact that the coal was not being deposited on the belt at all sorts of angles but was being carried forward without disturbance on its flat surfaces.

John Forrester said that, in his belief, the reason why metal conveyors were preferred was because they could be lengthened and shortened at pleasure and so they could be operated with greater flexibility than belt conveyors. W. C. Holman said that to obviate brushing where the coal was low the Phelps Dodge Co. was using two Jeffrey belt conveyors in tandem.

The time-honored question as to whether the introduction of longwall and conveyors had resulted in a larger percentage of the smaller sizes of coal was introduced and J. M. Jennings said that Mr. Knox was getting unusually large coal with conveyors, as long as he sought to get the larger sizes. Later the market required smaller coal and accordingly he had it broken up smaller with heavier shooting.

Otto Herres said that with longwall working such

as that in operation at Sweetwater the coal would be broken up into smaller sizes due to the crush. George B. Pryde took a different view. Longwall was not as destructive to the integrity of coal as shooting from the solid and that was the practice at Sweetwater. He would say that the present methods had not increased the percentage of slack.

The discussion then shifted to hazards. Mr. Dickinson said there was an increase of dust in machine loading, especially with the McKinley loading and cutting machine which was extremely dusty. Mr. Forrester declared that more dust was to be expected because, when loading by machine, the coal is shot harder in order to make it easier for the machine to pick it up. However, he believed there was less hazard because, with the closer supervision possible by reason of the concentration of operations, it was easy to keep down the dust.

#### CONCENTRATION HAS DANGERS

Eugene McAuliffe believed that machine loading was more dusty than hand loading. D. Harrington thought the hazards greatly increased by modern methods of loading. Not only did the methods increase the quantity of dust but they also increased the rapidity of mining and the increased quantity of coal broken down caused large quantities of gas to be released. The number of motors on loading machines and conveyors greatly added to the hazard. No more dangerous places could be found for such motors than at the working face where there were excessive quantities of pure coal dust and where there was more gas than at any other point. In reply to Mr. Herres' suggestion that machine loading was safer because of the concentration and the possibility of close supervision that went with such concentration, Mr. Harrington said that he believed concentration likely to prove a source of danger rather than its preventive. At Dolomite, Ala., a number of men had assembled and as a result what was a relatively small explosion killed a large number of men. Concentration, he said, is not without its dangers in mine operation.

To Mr. McAuliffe these arguments did not appeal. Few places, he averred, were better sprinkled than the working places in a machine-loading mine. There was more supervision there, and there could be more ventilation. In this belief the machine loading would increase safety by that very concentration that Mr. Harrington deplored.

At the close of this discussion on the safety of mechanical loading D. Harrington read an article on rock dusting practice in the Rocky Mountain region and L. C. Clare one on "Mudite's Relation to Nature." Mr. Harrington said that owing to a lack of funds the U. S. Bureau of Mines had made no experiments in the Bruceton mine in the use of mudite.

H. A. Wylan, of Superior, Wyo., said that the wetting down of empty cars was more important than the sprinkling of loads. Cars should be sprinkled when entering the mine as well as when leaving them. The "empty" car distributed more dust and finer dust than the loaded car.

E. K. Judd said that though gypsum had been found disposed to fall off the ribs when being applied, he believed that its merits as an inert material should not be overlooked because it absorbed heat rapidly and that seemed a primary quality in a good explosion-preventive dust. The Bureau of Mines had made endeavors to



ascertain the temperatures reached momentarily in mine explosions. Gold and silver foil were suspended in the Bruceton experimental mine. The first was melted only once and the second frequently was found to be fused, showing that the temperature was sometimes above 1,832 deg. F.

The specific heats of earthy bodies used for rock dusting range generally from 0.19 to 0.22. Taking the larger figure and assuming the temperature to rise 1,765 deg. the number of British thermal units absorbed will be 388 per pound of dust. Dry gypsum contains 21 per cent of water of constitution which, at as low a temperature as 250 deg. F., begins to be expelled. Let us assume that the whole of the water of constitution is drawn off at 250 deg. F. Then the heat absorbed in British thermal units will be: 47 in raising the temperature of the gypsum to 250 deg. F., 48 in decomposition, 203 in evaporation, 237 in heating the calcium sulphate to the temperature of 1,832 deg. and 166 in raising the steam to the same temperature—a total of 701 B.t.u.

Limestone has also been regarded with favor. Does not limestone also break up under heat? Unfortunately the temperature at which that dissociation occurs is so

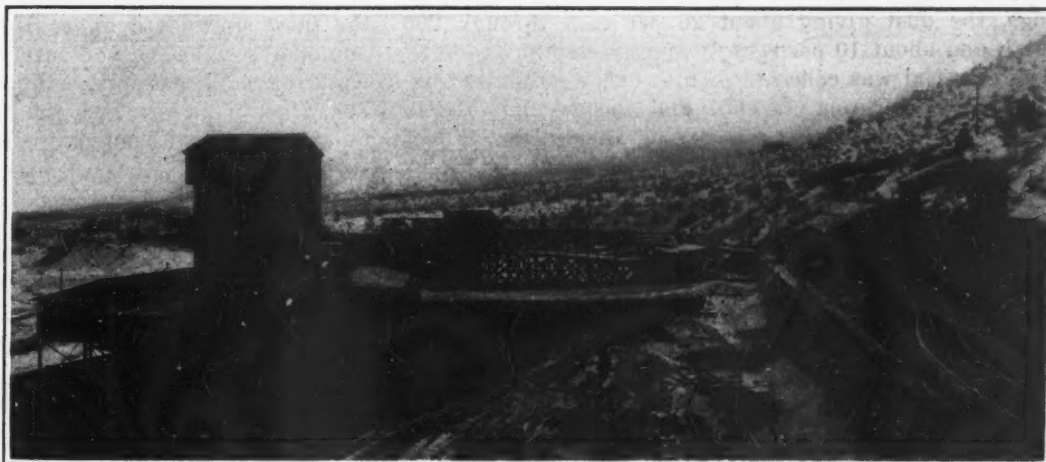
with a stoker and that about 25 per cent less coal would be needed for the same purpose. The stoker would also be more flexible, raising the temperature rapidly if desired and holding that temperature at any level which might seem necessary. With such a mechanism for continuous feeding it would be possible to eliminate smoke when burning the smokiest of fuels.

Mr. Herres said that the Pacific Coast Coal Co. had a small stoker furnace that was more simple than the Harrington. Pulverized coal equipment was being adapted to use in apartment houses. Two other stokers were mentioned, one developed, but not being commercially manufactured, by Mr. Garrison, the state engineer of Utah, who resides in Salt Lake City, and one which Mr. Mageath, of Omaha, Neb., has been manufacturing. Mr. McAuliffe said that Mr. Mageath recommended his small unit only for Rock Springs coal.

A short discussion on rock dusting followed, Mr. Harrington declaring that nearly all the operators were dusting too lightly for safety. With Utah coal it was necessary to have the dust in the roadways 75 per cent inert matter. R. M. Magraw stated that on inquiry at the Bureau of Mines he had been told that about 5 tons of dust should be used for 1,000 tons of output.

#### Hiawatha Has a Fine Tipple

The Institute journeyed from Price to Hiawatha in spite of storms and washed-out roads. This plant, of the United States Fuel Co., one of Utah's best, was visited. It receives coal from an incline on which 16-car trips operate. It can size, clean and load 400 tons an hour. Nearly 20 sizes are within the range of the horizontal screens.



great that it is doubtful if the action ever takes place during an explosion and much more doubtful whether, if it should occur, it would progress in any great measure. Only at 1,700 deg. F. and under exceptionally favorable circumstances does the limestone begin to lose carbon dioxide. Prior to that time 352 B.t.u. are absorbed, the decomposition adds to this 765 B.t.u. and the heating of the products to 1,832 deg. F. adds to the heat absorption 30 B.t.u., making a total of 1,138 B.t.u. This is an impressive figure 1,138 as against 388 for the indecomposable bodies and 701 for gypsum.

Mr. Judd believed, however, that under actual conditions the limestone would absorb no more heat than any indecomposable dust such as silica sand, leucite or shale and that gypsum was the more desirable material. Gypsum might make ideal tamping. The experiments being made by J. K. Mabbs up to the present showed that gypsum was by far the least absorbent of moisture of any of the inert bodies tested, that limestones varied greatly, some being slightly more absorbent than gypsum and some far and away more absorbent. Silica sand was quite highly disposed to take up moisture.

On Friday morning a paper on "Domestic Fuel Stokers," written by Joseph Harrington, was read by the secretary of the Institute, Benedict Shubart. The author asserted that much cheaper coal could be used

T. C. Harvey then read a brief description of the Columbia tipple and mine. The secretary announced that detours had been arranged around three bad washouts between Columbia and Price and that cars were ready to take the visitors to the former place where an elaborate luncheon had been prepared by the Columbia Steel Co. At this mine all the coal was being crushed, the picking tables not being in operation when the visitors went through the tipple. The coal at this mine and at Sunnyside does not have an equal quantity of resin with that of Hiawatha and Spring Canyon; in fact it is believed by some to be part of a different seam. After lunch the automobiles returned to Price after a short visit to the historic tipple at Sunnyside.

On one occasion when the Sunnyside tipple burned, the smelters of almost the entire West were deprived of fuel. Ten days after the fire the tipple was re-erected and was crushing coal as merrily as ever, the Denver & Rio Grande R.R. having disrupted its service to get the material from Salt Lake City to Sunnyside. On another occasion a shovel got into the disintegrator and the sparks that resulted though merely the result of mechanical violence served to explode the dust. Evidences of the burning of the shales due to the crop fires in the coal should be seen near the tipple. This was the Institute's last mine visit.

## West Tries Everything in Rock Dusting

By D. Harrington

Consulting Engineer, Salt Lake City, Utah

**P**RACTICALLY every method of rock dusting coal mines is now used in the Rocky Mountain states. Experience and strict mining safety laws have driven mining men to this form of explosion prevention—and most of them are convinced water is also a necessary safeguard. They have tried all the dusting processes known and it is interesting to note that the most successful have turned clear back to the practice of 1916 as it was developed, beginning in 1912, at the Delagua mine of the Victor-American Fuel Co. in Colorado. This was the first extensively rock-dusted coal operation in this country.

In 1916, while in the Bureau of Mines service, I made an underground study and a report to the Bureau on this mine. There were then some 10 miles of entry in that mine which had been kept well rock dusted for at least four years. The dust used was "adobe" or surface soil screened from sweepings of the dry surface wagon roads through a screen with  $\frac{1}{2}$ -in. openings, the dust giving about 20 per cent through 200 mesh and about 10 per cent of approximately  $\frac{1}{2}$  in. size. The material was collected during dry weather by contract at \$1 per ton (sacked) and was accumulated in summer and stored for winter and spring use.

The dust was scattered through haulage entries by hand or by an electrically operated blower and was held on shelves along the ribs or between and on timber caps with from  $\frac{1}{4}$  in. to 2 in. thickness of the rock dust. The cost of maintaining the 10 miles of entry well dusted was about \$1,500 per year or \$150 per mile per year. Total cost of the rock dusting over a four-year period was about \$6,000, about 2,500 tons of dust being used and 2,000,000 tons of coal produced. The cost included about 1,200 days labor dusting at \$2.50 per day, 2,500 tons of rock dust at \$1 per ton and miscellaneous labor, material, repairs, power cost, etc. amounting to about \$500. The cost per ton of coal produced for keeping 10 miles of entry rock dusted was about 0.3c.

### SPRINKLED INTERIOR OF MINE

In addition to the rock dusting, some sprinkling was done chiefly in the interior of the mine costing about 0.4c. per ton; and, due to spilling of coal and sifting of coal dust through loose cars on the entry floors, the floors of haulage roads were kept sprinkled between and just outside the rails. Total cost of sprinkling and rock dusting was about 0.7c. per ton, much less, of course, than the same work would now cost.

The Dolomite explosion near Birmingham, Ala., in November, 1922, and the Dawson No. 1 Mine explosion at Dawson, N. M., in February, 1923 (at both of which I made underground inspections and reports) both starting on main intake haulage road and both in mines which had fairly elaborate watering systems, convinced me that at least as far as freezing can occur on main intake air courses which also act as main haulage ways, rock dusting is likely to be much more dependable than sprinkling.

In making up the report on the Dawson explosion to the Bureau of Mines (copy of which also went to the owners of the Dawson properties) I strongly urged the rock dusting of main intake-main haulage roads (of which there were many miles being operated at Dawson) at least as far as freezing extended in coldest weather together with extension of watering methods in the interior mine workings placing water lines, and water hose at every working face, and keeping thoroughly wet all open interior workings. The use of water on cutting chains on all mining machines and also the sprinkling of loaded car tops at the faces and on partings was recommended. It was strongly recommended that each section of all mines be protected by rock-dust barriers.

### MOST MODERN PRACTICES AT DAWSON

By January, 1924, or about a year after the Dawson No. 1 explosion, the Dawson mines were by all odds the most up-to-date mines I had ever seen from the standpoint of health and safety; both rock dusting and watering methods were being used to an extent which I had never before encountered. The Dawson mines quickly became the mecca of western coal mining people and almost immediately modifications of the Dawson practice were being adopted in mines of New Mexico, Colorado, Utah and Wyoming.

The now famous Utah regulations adopted after the Castle Gate explosion in March, 1924, involving compulsory rock dusting "at least into the most distant points where freezing takes place in coldest weather," use of rock dust barriers, use of water on coal-cutting machines, compulsory sprinkling of faces by miners and of all other interior open workings by the company, exclusive use of permissible explosives and of electric blasting and exclusive use of closed lights, are all Dawson practice though some of these practices had their origin in Utah and some were in at least partial use previously in Utah mines as well as in mines of New Mexico, Colorado and Wyoming.

While all of the Utah coal operators agreed to the new regulations before they were issued some have been somewhat doubtful as to the efficiency of rock dusting, yet practically all are in some degree complying with the law. Some of those at first frankly skeptical now are rock dusting far beyond the amount specified in the new regulations; some are rock dusting as specified by the new regulations or even beyond the demand of the regulations and are simultaneously sprinkling intensively the floor of the places where ribs, roof and floor are rock dusted and are *soaking* the interior mine workings. On the other hand, there are a few whose rock dusting is evidently done only to "get by" when the state inspector comes around.

One of the most extensively adopted adjuncts to rock dusting in western mines is the spreading on the floor of intake haulage entries of surface soil or adobe which usually becomes dry and dusty and, in addition to greatly aiding in track ballasting, also sends into the air by movement of animals, trips, etc., considerable quantities of finely divided incombustible dust which

This article is from a paper read by Mr. Harrington at the Price meeting of the Rocky Mountain Coal Mining Institute, Aug. 24, 1925.



ultimately settles on ribs, timbers, roof, etc., and aids in keeping percentage of combustible low.

During the past year or year and a half much over a hundred miles of haulage entry floor in western coal mines have been covered with from a few inches to as much as a foot of soil or adobe at a cost of from 10c. per foot of entry to 25c. or even more, depending upon thickness of the covering, amount of preparatory cleaning done and whether the adobe can be found readily available to the mine, whether it can be loaded in pit cars by steam shovel or by horse scraper and trap or by hand, etc.

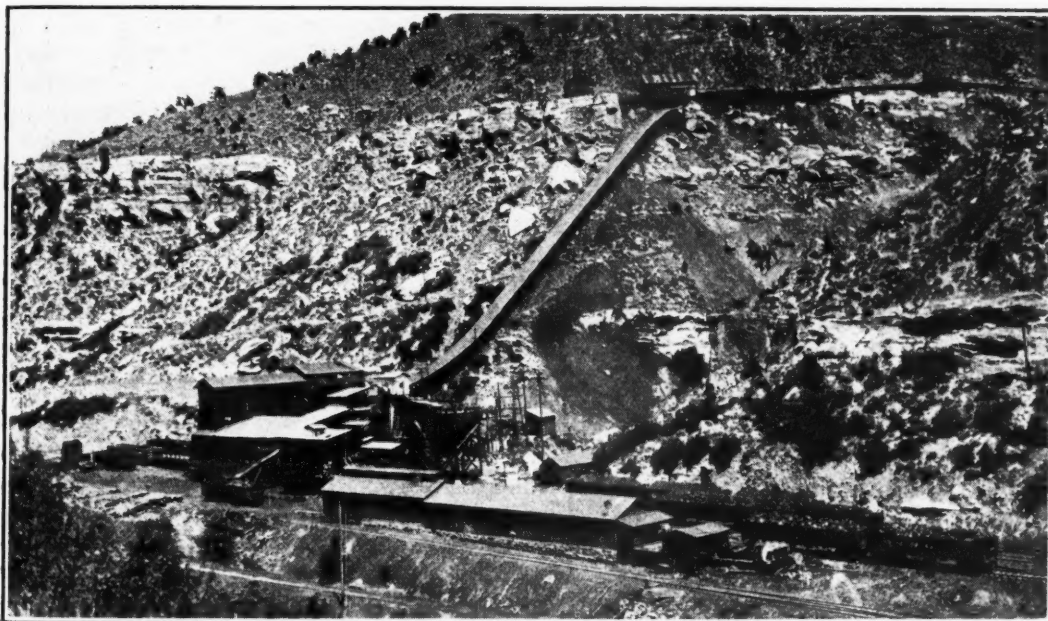
Suitable material for the floor covering is almost anything which pulverizes upon becoming dry, and has a combustible content of less than 10 per cent. In many instances the material has over 50 per cent free silica but no alarm is felt since little of this material gets into the air breathed by workers and up to date no complaints have been made nor has there been any evidence of trouble. While placed in mines in lumps as large as a man's head this material dries and disintegrates to such an extent that when sampled on entry floors after a few months of service it runs 25 to 50 per cent through a 200-mesh screen.

For ordinary rock dusting purposes the material most

a watery mud of about 20 per cent solids and "muditing" or covering roof, ribs, and floor with the watery mud which has some decided advantages in protecting and covering exposed surfaces. With certain kinds of soil and after successive coatings in places which dry out rapidly, the dried "mudite" acts largely as ordinary rock dusting.

Some smaller mines apply rock dust by hand but most of the companies have made their own rock dusters and, curiously enough, most of the rock dusting machines are essentially modelled after the one used by the Victor-American Fuel Co. at Delagua, Colo., in 1912 to 1916. These machines consist of a small, electrically-driven, belt-connected blower (heater gage 2 to 5 in.) and a dust hopper with an outgoing pipe. Locally-made machines of this type cost somewhat less than \$1,000 and some of them dust 25 to 35 lin.ft. of entry per minute. One such machine recently redusted 17,000 ft. of entry averaging 10x12 ft. in cross-section in eight shifts.

Cost of rock dusting by these blower units, using crushed limestone or crushed leucite, runs from 2 to 4c. per foot of entry; about 60 per cent is labor, 30 per cent rock dust and about 10 per cent miscellaneous items such as power and materials used. The amount of



#### Typical Utah Incline

The seam mined by the Carbon Fuel Co. at Rains outcrops high on the face of the hill, making necessary this long conveyor to the tippie and loading plant. R. P. Fitch is superintendent of this mine. His top plant, as well as several others in Utah, is capable of applying most of the refinements now known in coal preparation. Some Utah operators deplore this recent development of sizing though it makes the coal of that state even more marketable.

in use in the West is crushed limestone obtained from cement mills or smelters at a cost of \$3 to \$5 per ton sacked at the mill or smelter. Fineness is 40 to 60 per cent through 200 mesh. Freight brings the cost, f.o.b. mine, to \$5 or \$5.50 and in at least one instance to \$8 per ton. A few mines in Utah have used crushed leucite which is silvery white in color and glistens brilliantly when crushed to 100-mesh or less, is almost entirely incombustible, costs about the same as the crushed limestone and is placed on the ribs, roof, etc., almost as readily as limestone.

Both the crushed limestone and the crushed leucite absorb moisture in humid air. A few mines are preparing to crush their own local material and at least one company in Colorado has a combined crusher and rock duster which converts shale underground to dust and immediately deposits it. This company rock dusts all open parts of the mine up to and including the faces. A few mines are converting local shale oil to

dust deposited on ribs and roof runs 2 lb. or less per foot of entry. Many of the Utah mines have used compressed air on an injector principle forcing rock dust against ribs or roof with a high velocity propelled by compressed air at 40 to 70 lb. per square inch. This so-called high-pressure dusting dislodges coal dust from crevices, ledges and other projections and leaves a plaster of  $\frac{1}{2}$  to  $\frac{1}{4}$  in. of rock dust upon ribs, roof, timbers, etc.

The mining companies of Utah practically all have air compressors, stationary or portable, and water lines (now universal in Utah mines) can be used for carrying compressed air and as a result the high pressure dusting is popular because it leaves a heavier coating of dust than other methods (3 to 6 lb. per foot of entry) and costs but little more than with the low-pressure methods. Costs run from 4 to 6c. per lineal foot of entry.

Many Utah operators now believe the first coating of rock dust should be made by the high-pressure

method with subsequent or redusting coats, which require but 1 to 2 lb. per foot of entry, to be done with low-pressure machines which are somewhat the quicker. One Utah mine now figures on placing rock-dust boxes along mine workings about every 500 ft. and using the compressed air through water lines to force the rock dust into the air to be later deposited by the air on roof, ribs and floor and it is expected to be able to rock dust practically all intake air courses of a fairly large mine (capacity 2,000 tons per day) in about two shifts. Another mine now has an effective dusting machine of the usual blower type but taking its power from the wheels of a pit car which may be hauled by a mule. It is now felt by many Utah coal mining men that where air velocity is as high as 500 ft. per minute, redusting can be done readily by using the air currents as distributors. The dust is thrown into the air by blower at points 500 to 1,000 ft. apart. However, other operators say that using air currents to distribute rock dust bears the same relationship to efficient rock dusting as do frozen water lines to efficient sprinkling methods.

Rock dust barriers used in the West are largely of the V-trough type using 16 to 20 troughs in a barrier, though some mines with high coal use 30 or more troughs per barrier. The volume of rock dust per barrier runs from 2,500 to 5,000 lb. Various kinds of rock-dust material are used in these barriers, among them crushed limestone, crushed leucite, siliceous mill tailings, adobe, flue dust, etc. It is felt that almost any kind of fine incombustible material will serve provided its specific gravity is not too great and provided also that it will not pack or consolidate too much or that it will not absorb moisture to too great an extent.

It is found that in the extremely humid air of most of our Utah mines which use water freely in interior sprinkling, the limestone, leucite, flue dust, and some adobes absorb so much moisture as to become a paste or mud unless securely covered by some such impervious material as oil cloth. Highly siliceous material, however, absorbs little or no moisture and it now appears that crushed quartz would be admirable material for rock-dust barriers.

The usual 16- to 20-V-trough barrier constructed of timber costs \$50 to \$75 completely installed, while the same kind of barrier constructed of galvanized iron troughs and similar material, such as is now used to a considerable extent by one company, costs around \$100. In my opinion the use of galvanized iron or similar material for permanent barriers is the wiser and in the long run the cheaper, as the wooden barriers soon become deformed, or they decay, or they swell due to moisture and can be relied upon to remain in good working condition but little over a year in most places and much less than a year in many places.

Some mines use a succession of comparatively loose shelves as barriers, the shelves extending practically across the opening, where there is no haulage, or along the rib where there is haulage; some properties use as barriers a supply of rock dust contained in a perpendicular box-like opening in the rib held in place by a door which is opened by a vane-like trigger extending into the mine opening. A few mines are preparing to use the concentrated type of barrier recommended by the Bureau of Mines. Some mines have well over 100 barriers installed, though in general not more than 15 to 25 barriers are found in any one mine and most mines have omitted the barriers wholly.

## Does Sprinkling Increase Spontaneous Combustion in Mines?

By C. P. Crawford

Combustion Engineer, Utah Fuel Co.,  
Salt Lake City, Utah

**B**UREAU OF MINES Technical Paper 172, by S. H. Katz and H. C. Porter, entitled "Effects of Moisture on the Spontaneous Heating of Stored Coal" says at the outset, "Spontaneous fires in storage piles of bituminous coal have been the source of trouble and loss since the industrial utilization of coal began. In Europe the idea arose that spontaneous combustion is more liable to happen during wet weather than during dry. Statements favoring or opposing this idea have crept into the literature. Conflicting conclusions, based on experiment as well as opinions based on observations of various degrees of reliability, are given in most of the recorded discussions of the subject.

"Because of the uncertainty of the effect of moisture and its seeming importance among the conditions that effect spontaneous combustion in stored coal, the work described in this paper was undertaken by the Bureau of Mines. The experiments showed that a coal from Illinois oxidized faster when dry, whereas a sample of Pittsburgh coal oxidized faster when moist. These discordant results and similarly inconsistent results from the observations of different investigators may be coupled with the fact that under actual conditions of storing, both coal and air always contain a considerable amount of moisture."

The foregoing report of the investigations of the Bureau demonstrates that the mystery of spontaneous combustion has not yet been solved.

I became interested in the matter about ten years ago in observing what was probably one of the best exhibitions of this phenomenon. The old dump at Castle Gate No. 1 mine contained bony coal and track cleanings generally. In winter when snow fell upon this old dump, the snow was soon melted by the heat of the dump which was comparatively warm at all times. Within 48 hr. afterward little blue flames were in evidence on the surface of the pile. Few of the gas feeders were sufficiently constant to maintain a steady flame at any given point, but shifting emissions of gas were ignited one by another, resulting in a continuous popping and apparent running about of the flames.

Another interesting exhibition of spontaneous heating was to be seen a few years ago in the storage coal piles of the local sugar factories. This coal was piled in concrete lined pits filled with water. However, on this occasion the coal extended above the surface of the water. At every plant where this condition existed the coal was soon heating, and in each case the affected area was in a plane horizontal to and from 8 to 14 in. above the water level. The height of the hot area above the surface of the water appeared to be affected by the fineness of the coal.

This article is from a paper prepared by Mr. Crawford for the Price meeting of the Rocky Mountain Coal Mining Institute.



### "City Homes" At a Mine

This apartment house at the Standardville mine in the hills of Utah houses 20 families and affords them almost every modern convenience, including a good many that city apartment dwellers do not get. The building has electric ranges, patent beds that fold into the walls, hot and cold running water and good bathrooms.



It is well known that oily rags have a tendency to heat when allowed to accumulate in some location protected from free air circulation. For some reason, as yet unknown, this does not apply to petroleum or its derivatives.

Now, the most common explanation of spontaneous combustion is that the combustible material oxidizes by being brought into contact with air in the presence of moisture, the theory being that the moisture acts as a catalytic agent.

My theory is that spontaneous combustion is due to oxidation of combustible matter by free oxygen carried in solution by a liquid, the oxidation taking place only as, when, and at the place where this oxygen is released from solution by the evaporation of the liquid.

The reason this oxygen released from solution in liquid is more active than the oxygen of the atmosphere is because of its concentration. Under a pressure of one atmosphere and at the freezing point water will hold in solution a maximum of 4.1 per cent of oxygen, by volume, whereas the maximum amount of nitrogen gas it will carry is 2 per cent of its own volume. This permits in extreme cases of a dissolved atmosphere having a content of 2 parts oxygen to 1 part nitrogen, as compared with a ratio of 1 to 4 in normal atmosphere. The activity of concentrated oxygen in promoting combustion is well known and is demonstrated in the oxy-acetylene torch.

Let us apply the commonly accepted theory of spontaneous combustion to the case of the old dump at Castle Gate. The melting snow would furnish the moisture as a catalyzer, but where would the air come from to furnish the oxygen? Surely all free oxygen contained in any air present in the interior of the dump would be exhausted after the first fire. Also, if the oxygen were furnished by free air in the affected area, why does the gas come to the surface to complete combustion?

Now, let us apply the newer theory. The melting snow carries its dissolved oxygen down into the pile. So long as the water remains in liquid form it holds the oxygen intact, but capillarity soon causes this water to spread out to an extent directly dependent upon the fineness of the material in which it reposes. Evaporation soon begins, and at this time and place the concentrated oxygen is released.

All solids absorb gases, and their ability to do so is increased in proportion to the area of their exposed surfaces. The oxygen is first absorbed by the solid, to be followed by chemical combination in case the solid is combustible matter. If the heat thus generated is not dissipated as fast as generated, the resultant rise in temperature speeds up the whole reaction until all available oxygen has been consumed. If the temperature of the combustible has not been raised to its ignition point in an atmosphere of free air before the exhaustion of water supplied the oxygen, all heating subsides until there is another storm.

This theory applies equally well to coal stored in concrete pits. So long as all coal is submerged in liquid no heating takes place, but if the top of the pile is permitted to project above the surface of the water, heating will take place at the line of evaporation, which is at the point where capillarity ends.

While coke apparently does not heat from spontaneous oxidation, it is not unreasonable to suppose that some oxidation takes place to a slight degree. A higher degree of concentration of oxygen coupled with a higher temperature undoubtedly would result in combustion.

In the experiments conducted by the Bureau of Mines, as mentioned before, it is my opinion that the faster oxidation of moist Pittsburgh coal was due to the moisture absorbing its maximum of oxygen before any oxidation of the coal took place.

Elaboration on this line of thought brings up a question pertinent to coal mine operators. If this theory of spontaneous combustion is correct, what are its effects on a coal mine which is being sprinkled daily with fresh water? Suppose a mine is sprinkled with 200,000 gal. of fresh water each day. If this water has been thoroughly aerated, and is carrying its maximum of 4 per cent oxygen and 2 per cent nitrogen, the mine is receiving daily 12,000 gal. of dissolved air of which 8,000 gal., or 1,000 cu.ft., is oxygen.

Is it not reasonable to suppose that a sudden blast of heat, such as is produced by a gas explosion, would evaporate almost instantly a large quantity of water, thus releasing a corresponding volume of this two-thirds pure oxygen? It seems to me this might account for the violence of any subsequent dust explosion under conditions which indicate that practically all normal atmosphere has been devitalized.

## Low-Voltage Current Proves Safest for Shooting

By A. C. Watts\*  
Salt Lake City, Utah

**W**HEN MINE dust or gas ignites from shots in coal the powder used and the method of loading holes are first to come under suspicion. How many such explosions and fires are due to excessive voltages used in electric shot firing nobody will ever know. However, Mr. Watts proved to his own satis-

faction in Colorado that 500-volt current was responsible for a good deal of trouble in his mine, whereupon he introduced resistances of one kind or another to reduce his current to 100 volts at 45 amp. This he found to be adequate. Possibly many another mining engineer may profit by these experiments.

**F**OR SEVERAL YEARS, a mine in Colorado experienced considerable trouble from small fires caused by the blasting of coal. Although a well-known make of permissible powder was used, it was first thought that the powder ignited gas that might be present and that this, in turn, set fire to line brattices or to the coal. Experiments were, therefore, conducted with another make of powder, but the results convinced the superintendent of the mine, Robert Williams, Jr., that the fires were not caused by the powder but by the high-voltage electric current used for detonating the shots.

The mine "makes" gas freely, giving off from three-fourths to a million cu.ft. of methane per 24 hr. The coal is good grade bituminous of a free burning quality.

Electric shot-firing from the outside after all men and animals were outside had been practiced for a number of years. The shooting circuit was connected with the main power circuit at the mouth of each entry. Shooting circuit switches were mounted in boxes, which were kept locked with the handle of the switch, in open position, showing through the bottom of the box. The door of the box could not be shut and locked when the shooting switch was closed.

At the entrance to each room, or working place, a small switch, called the miner's switch, was placed on the shooting line. It was the duty of the miner, when entering his place at the beginning of the shift, to see that this switch was open and that it was kept open until he left the place at the end of the shift to go out of the mine. Grounded return was used for main power lines. The current was 500 volts, direct current, with 100 to 300 amp.

The nearest working face was 9,600 ft. from the shot-firers' switch outside the mine and the most remote working face was 2½ miles. The various working faces were scattered over a wide area between these two points.

A description of the main power line would be valueless; the conductors were of sufficient size, the drop in voltage being not more than 15 per cent. The shooting circuits were No. 8 wires in entries and No. 12 wires in rooms—double lines.

After first experiencing trouble with fires, the shot-firers were required to make an inspection immediately after detonating the shots; and, to expedite their work, rope trips were run. But until current was reduced, as a result of the experiments, a fire would start about

every week or ten days, and at least one local explosion occurred which blew out concrete overcasts and stoppings and extended 2,000 ft. from the point of origin. A more extensive explosion was prevented by the wet condition of the mine caused by efficient sprinkling.

On idle days, the superintendent and other observers experimented with other powders and shot with full current and with a hand battery. With the full current of 500 volts and 100 to 300 amp., flame invariably accompanied the detonation of shots. The flame of one shot was estimated to be at least 19 ft. long. Another shot acted like a roman candle and threw sparks of fire for 20 ft., one spark lighting on some brattice cloth and burning a hole in it. When the hand battery was used no flame could be seen, hence it was decided to experiment further with reduced current.

### CURRENT OF 100 VOLTS AND 95 AMP. USED

A water resistance 14 ft. long with copper terminals was constructed. Experiments showed the proper length between terminals to use for the mine but, as this varies for each mine, the figures would be of no value. This was used until one night a shot-firer decided not to use it because he had missed several shots the previous day, which led him to believe the current was not strong enough, so he used the full current with the result that a fire was started. To remove the possibility of such tampering, a resistance was made out of an old rheostat and adjusted until it was found that a current of 100 volts and 45 amp. was sufficient to detonate all shots without fires resulting.

Tests were made with Form CC-500 ohms resistors. Because no recording instruments were available no current readings could be made with instruments used, but visual observation indicated that the flame from detonators, when resistors were used, was about the same as when the current was cut down with water resistance—a small blue flame hardly discernible and shown on a photographic plate as a pin point of light. Although it was determined that resistors could be used, they were deemed impracticable.

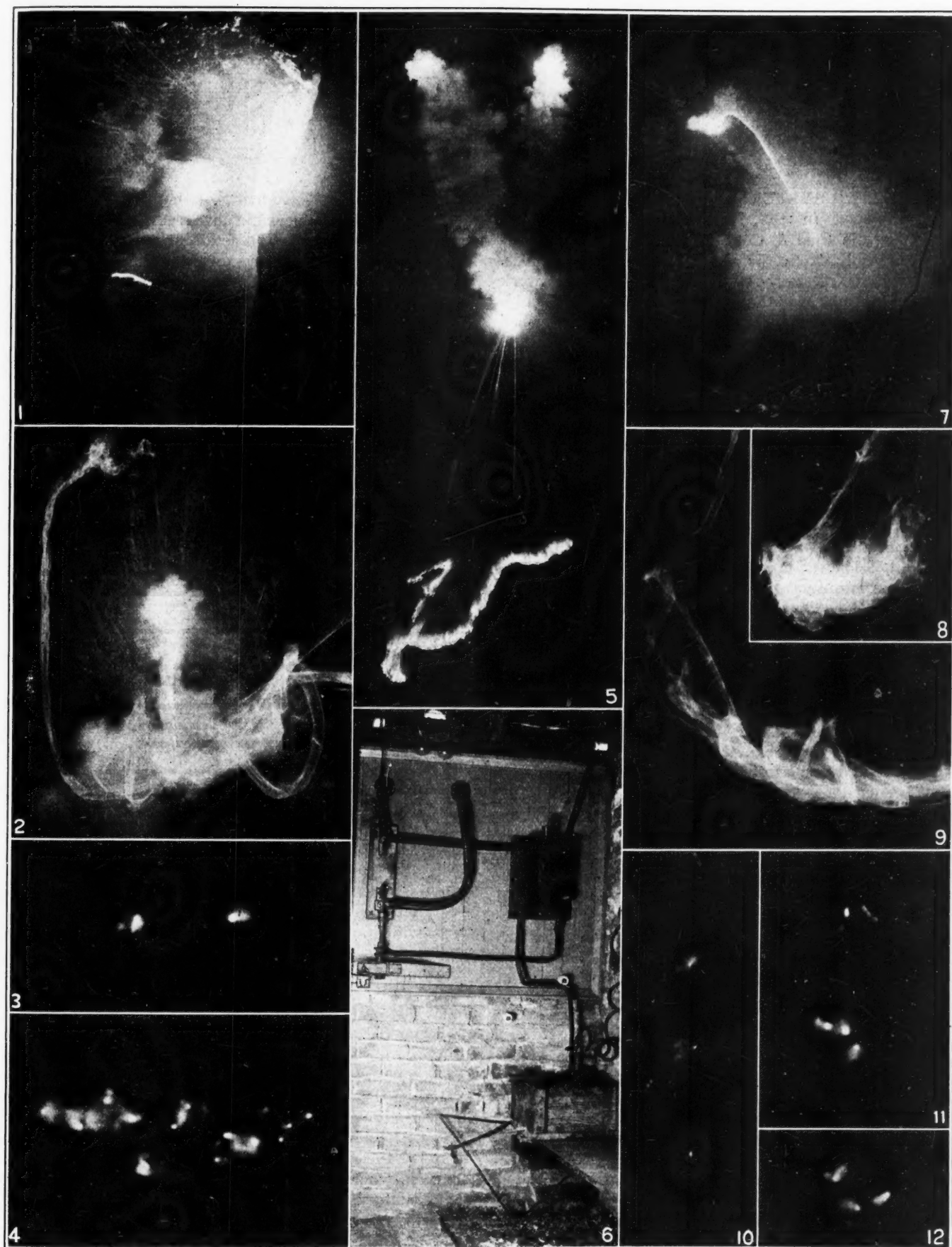
When testing with detonators, it was found that with full 500-volt current the paraffine covering on the lead wires of detonators was often set on fire and sparks thrown off, which could easily ignite methane or dry brattice cloth; this did not occur when a resistor or resistance was used.

When installing a shot-firing system, resistors can be used on the outside of each working place, or by placing suitable resistance for each district or by placing full resistance outside of the mine. This was adopted for sake of economy and greater insurance.

\*Chief engineer and geologist, Utah Fuel Co. and The Calumet Fuel Co.

This article was read by Mr. Watts before the American Institute of Mining and Metallurgical Engineers at Salt Lake City, Aug. 31, 1925.





### Dangerous "Fireworks" from High-Voltage Shot Firing Stopped by Resistance

Upper pictures show shots fired with 500-volt current. Water boxes and 500-ohm resistors cut it down to 100 volts at 45 amp. The photographs are as follows: (1) Blown-out shot, one stick of permissible; current full strength. (2) Detonator wrapped in gasoline-soaked waste; current full strength. (3) Two detonators in paral-

lel; current through 8 in. of water. (4) Twenty-five detonators in parallel; current through 8 in. of water. (5) Short circuit in cap wire; current full strength. (6) Interior of shooting cabin with switches locked in shooting position. (7) One detonator; current full strength. (8) Detonator wrapped in gasoline-soaked waste;

current through water. (9) Detonator wrapped in gasoline-soaked waste; current through water. (10) Three detonators in series; current through water. (11) Four detonators in parallel; current through two 500-ohm resistors in parallel. (12) Six detonators in parallel; current through three 500-ohm resistors in parallel.

## Easily Installed Power Lines and Controls Aid Work of Equipment in "V" System

By C. O. Gallaher and G. B. Southward\*

Elkins, W. Va.

THE "V" SYSTEM of mining, originated and developed in the Norton mine of the West Virginia Coal & Coke Co. in many respects departs radically from the usual coal mining methods. This made it necessary for the mine engineers to work out a special plan for the installation of electric equipment and the transmission of power such as is described in this article. However, it may be desirable first to explain the operation of the mining system so that the power requirements may be more clearly understood.

In Fig. 1 is illustrated a standard 10-face panel which has a normal daily capacity of 1,250 tons of coal. Conveyors are laid along the faces and in cross and lateral entries, two face conveyors on each block meet in a V and discharge onto a cross conveyor while the five cross conveyors discharge onto the lateral conveyor. In this way all the coal produced from the ten faces in the panel is conveyed to a common point on the haulway where it is loaded into a trip of mine cars.

Because mining is done by machine undercuts along the faces, they always retain a fixed length and the same relative position to each other while advancing abreast toward the lateral entry. When the Vs of the faces have reached the lateral entry, as shown by the dotted lines in Fig. 1, the lateral conveyor is separated into its units and carried ahead 200 ft. to the next lateral entry where it is re-assembled. As the mining of the blocks progresses, the cross conveyors are shortened and one after another of the conveyor sections removed and reset in the advance cross entries.

The conveyor used is of a sectional type which is easily transported and assembled. It is equipped with self-contained drive units that can be placed at any of one or more points in one conveyor unit, as the length of the latter may require. Only one drive unit is used on each face conveyor, but each cross conveyor requires three drives when at its maximum length of 225 ft. and one drive at its minimum length of 25 ft. The lateral conveyor is equipped with seven drives which at times are increased to eight.

### INDUCTION MOTORS DRIVE CONVEYORS

The conveyors are driven by 220-volt induction motors with high resistance rotors to provide ample starting torque. The face-conveyor motors have a capacity of 7½ hp. while the motors which drive the cross and lateral conveyors are rated at 5 hp. Alternating current at 230 volts is used for the conveyor motors, electric drills on the faces, blower fans in the advance entries and for the electric lights. Direct current at 550 volts drives the locomotives and the undercutting machines.

Since all the coal mined in this panel is brought by the conveyor system to one discharge point, it is essential that the system be controlled from this point. Also, since it may be desired at times to stop one or more of the conveyors, the control is so arranged that each

may be operated independently of the others. Furthermore, because of the periodic advancement of the lateral conveyor, the wiring as well as all switches and controls must be designed to permit of rapid installation and removal, and also must be rugged enough to withstand frequent shifting.

C. O. Gallaher developed the wiring and control system for a standard 10-face panel as shown in Figure 2. The 2,300-volt, alternating current lines (not shown on the map) are carried on the surface to the top of the borehole, and at this point disconnecting switches, choke coils and lightning arresters are installed. The drill holes vary in depth from 120 to 200 ft., and are cased with 3-in. pipe which extends to the floor of the mine and is provided with a suitable outlet near the roof for leading out the cables. These cables are suspended from the surface and consist of three No. 2

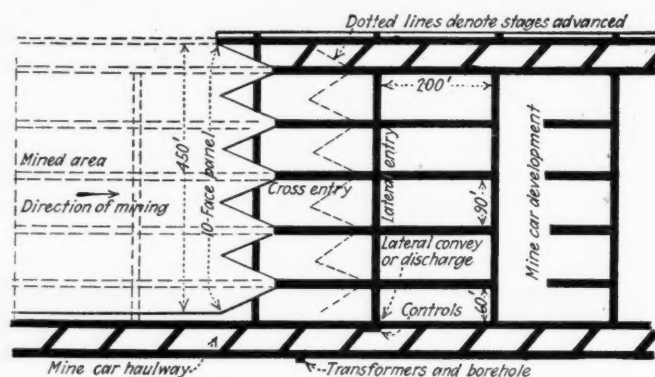


Fig. 1—Standard 10-Face Panel at Norton

This illustrates the celebrated V-system of mining in which conveyors transport coal from workings through face and lateral entries to car-loading points on the haulways. The wiring and control system for this panel layout is shown in Fig. 2.

wires which are insulated with varnish and cambric for 2,300 volts.

From the bottom of the drill hole, A, 2,300 volts are transmitted through the primary cutouts, B, to a bank of three 75-kva. transformers, C. These step down the potential to 230 volts and are also connected to supply 115 volts for lighting purposes. The transformer bank is equipped with low-voltage lightning arresters, D, connected on the secondary side of the circuit, with the air gap set slightly above the potential of the circuit.

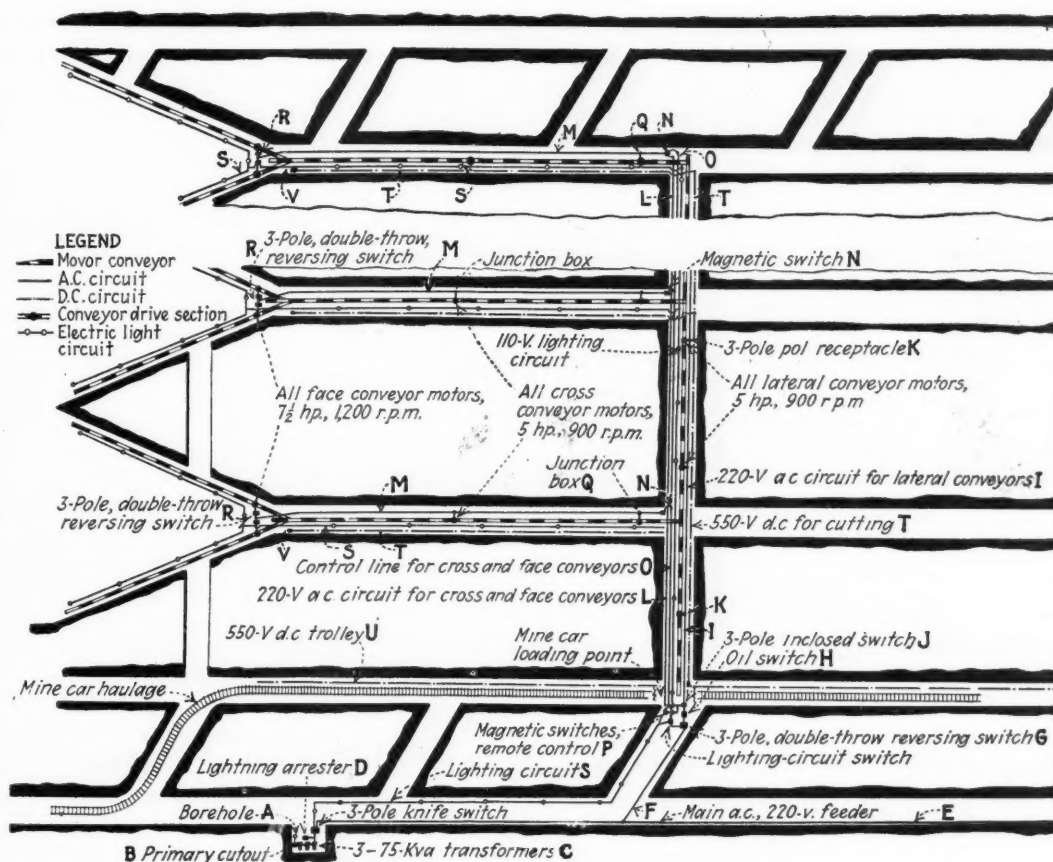
The ground wire from these arresters is not shown. It is led to the transformer casings and thence to the borehole where it is connected to the casing which is also grounded on the surface. A three-pole knife switch, E, is located just beyond the transformers for disconnecting the main feeder lines. As a safety measure a lattice fence is placed around the transformers to keep any employee from coming in contact with the high voltage.

The 230-volt feeder line, E, is 1,000 ft. long and located in the heading, thus allowing a 2,000-ft. panel to be mined before the transformers are moved to another borehole. From this main feeder, short cables, F,

\*Mr. Gallaher is chief electrician and Mr. Southward is chief engineer of the West Virginia Coal & Coke Co.



FIG. 2  
*Wiring and Control System for Standard 10-Face Panel in "V" Mining at Norton, W. Va. It Was Designed by C. O. Gallaher, Chief Electrician of the West Virginia Coal & Coke Co., and Has Been Used Successfully for a Long Period.*



are carried through a crosscut to the main 800-amp., double-pole reversing switch, *G*, and the main oil switch which are installed at the conveyor control point. The circuits which operate the conveyors lead out from this main oil switch, *H*, which is equipped with overload relays to trip at 600 amp.

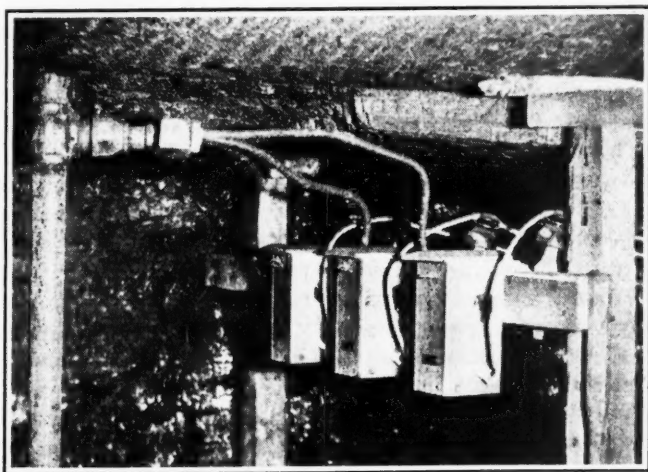
The lateral conveyor circuit, *I*, is strung with three-conductor cable which varies in size from No. 00 to No. 6. This circuit ties in the eight lateral motors and is controlled from a three-pole, enclosed switch, *J*. Three-pole polarity receptacles, *K*, are placed in this line connecting with polarity attached to the motor cables. These are quickly attached and detached when the lateral conveyor is moved ahead.

All cross, and face-conveyor motors are operated through the circuit, *L*, which consists of three single-

conductor, rubber-covered cables leading off from the main oil switch, *H*, with 500,000-cir.mil cable and ending with cable of No. 00 size. These cables are strung along the entire length of the lateral heading and are provided with a separate branch circuit, *M*, which is led along each cross entry to the "V" of the faces. Magnetic switches, *N*, are located at the junction points of the cross lines, and are operated through the control circuit, *O*, by remote control, *P*, at the mine car loading point. Motor junction boxes, *Q*, are attached to the cables at each motor location on the cross line; face conveyor switches, *R*, are connected at the end of this line, which is at the throat of the "V."

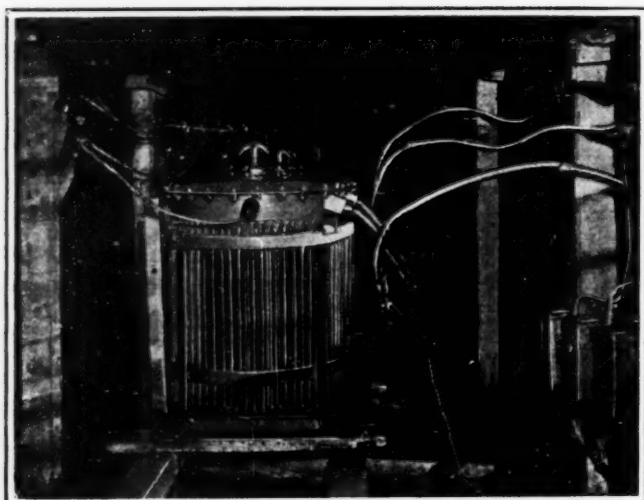
The motor junction boxes are of metal and in size measure 6x6x4 in. They are constructed with hinged top covers and all terminal blocks are mounted on ebony. Round-socket terminals are installed on the main cable connections leading into the box and split-end terminals lead out for the motor connections. All of these terminals are phased out and marked, 1, 2 and 3, to correspond with similar markings on the cable connections so that it is easy in reconnecting motors to obtain the proper direction of rotation. The face conveyor switches, *R*, are equipped with polarity receptacles for plugging in the short cables leading to the face conveyor motors.

While the face conveyors are being moved forward, the cable is withdrawn from the receptacle and rests on the conveyor. The cross conveyor cables are made up in 66-ft. lengths, the ends of which are connected at the motor junction boxes. As the cross conveyor is shortened, one of these lengths is coiled and eventually removed along with the junction box and drive unit in the process of the retreat. Because of the frequent adjustments made in the wiring to conform with the advances made in mining, all cables on the cross line are laid out on the floor where it is dry and held by



**Fig. 3—Where Power Enters the Mine**

Here is shown the beginning of the underground transmission system. The vertical pipe on the left is part of a borehole casing in which a 2,300-volt circuit is conducted from the surface to the primary cutouts suspended from the timber crossbar.



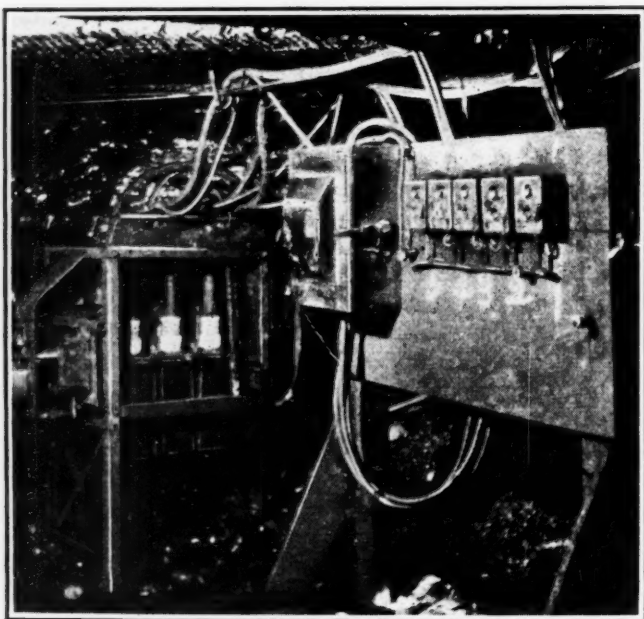
**Fig. 4—Transformers and Lightning Arresters**

This bank of three 75-kva. transformers step down the potential from 2,300 volts to 230 volts. The boxes on the right are low-voltage lightning arresters. These are connected on the secondary side of the circuit, with the air gap set slightly above the potential of the circuit.

insulator pins which are set along the ribs in wet places.

Alternating current for the electric drills on the faces is transmitted through a portable Tirez cable which is connected by polarity plugs on the metal case of the magnetic switches, *N*, at the junction point of the cross circuits. For lighting purposes, separate alternating current lines, *S*, of 115 volts lead from the transformers to all working faces. For the cutting machines a 550-volt direct current circuit, *T*, is led from the trolley circuit, *U*, to a plug, *V*, at the working faces.

All conveyors are controlled from the mine-car loading point. The main oil switch, *H*, closes the conveyor circuit which starts the lateral conveyor, but the cross conveyors are started separately through the magnetic switches, *N*, with the remote control, *P*, at the loading point. This remote control has a start-and-stop station for each cross conveyor and, therefore, any of them may be operated independently.

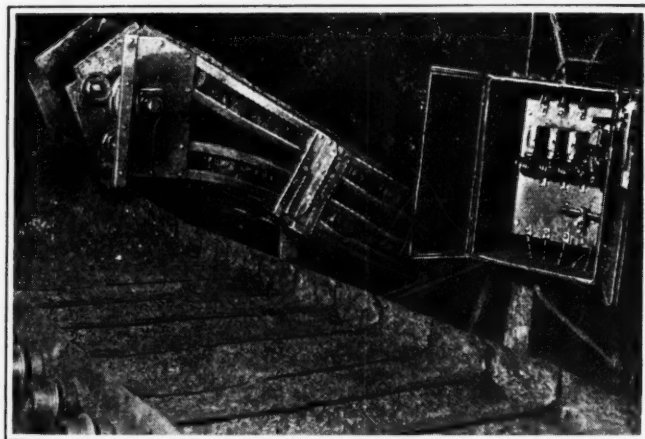


**Fig. 5—Main Switching Equipment**

These controls are located at the point where the lateral conveyor discharges into mine cars. From left to right the equipment consists of an oil switch, a lateral conveyor switch and remote control pushbuttons operating five cross conveyors in a battery.

In addition to the main control switches, each face conveyor, through its separate switch, *R*, can be stopped at any time at the face and may be started from this point providing its main control switch is still closed. The reversing switches for the face conveyors are used when starting the face conveyors under overload conditions, which sometimes occur at the beginning of a shift when the conveyors are thickly covered with coal rolled out in shooting. By running the face conveyor for a few inches in a reverse direction enough slack is provided to enable the conveyor to pull forward from under the coal without difficulty. The main reversing switch is used for reversing all motors in the entire battery when timbers and supplies are conveyed from the mine cars to the working faces.

As the conveyors frequently are stopped under full load while trips of mine cars are being changed, the motors are connected directly across the line in order to get full starting torque. The motors are started in groups. The main-line conveyor with a group of eight motors is started first. The cross-line conveyors, one at a time, are next started through the agency of the remote control switch and in groups of three or five motors depending upon whether the face conveyor



**Fig. 6—Magnetic Switch for Cross Conveyor**

This switch is located at the intersection of one of the cross conveyors and the lateral conveyor and controls the cross conveyors indirectly through a remote control arrangement on the main switchboard.

switches are open or closed. The time required to start the entire battery of conveyors is 5 to 10 sec.

Because a high starting current is built up the motors are not fused independently; a fuse heavy enough for starting would offer no protection whatever from overload while the conveyors are running. Since the use of starting and running switches would complicate the wiring to a prohibitive extent, eliminating all fusing and protecting the entire battery with overload relays has proved satisfactory. These are located on the main oil switch, *H*, which is set at 600 amp., the tripping point of the entire battery of conveyor motors.

These wiring and control arrangements at first glance may seem rather complicated. The installation not only insures satisfactory electrical operation but also is designed to facilitate rapid connecting and disconnecting, which the mining system requires. Much time for experiment was spent before the system was developed to its present state. It is now considered satisfactory in every respect. When it is remembered that this wiring provides for an output of 1,250 tons per day, the mechanical and electrical work involved does not appear excessive.



# Unstable Dollar Causes Coal's Wage Troubles

By Prof. Irving Fisher

Yale University, New Haven, Conn.

THERE ARE TWO outstanding industries in the country which seem to have more than their share of "labor trouble"—the railroads and the coal mines. Not only are they constantly faced with the possibilities of a strike, but when the situation becomes acute, they are not allowed to settle the thing quietly.

A strike in a foundry or factory is heard of by the public and then at once forgotten, but a strike in the coal fields arouses public discussion, talk of nationalization and government interference in its settlement.

There is danger to the present organization of the coal mining industry that comes from public dissatisfaction with the way it is managed. But there is another disadvantage arising from labor troubles that is more imminent and is at the same time the basis of public criticism, and that is the loss in production during a strike. This loss is harmful to all. The miners lose their wages, the operators lose their profits and the public loses the chance of low prices. It is estimated\* that in a recent strike in the Pittston field lasting from Nov. 24, 1924, to Jan. 26, 1925, the miners lost \$3,827,750 in wages while the operators lost \$840,000 and the world's supply of coal was decreased by 850,000 tons or about 1.7 times as much as New York City uses for the making of electricity. (The Pittston field produces about 9 per cent of the anthracite total of the country.)

It is not necessary to go further into detail to illustrate this axiomatic fact: strikes do much harm to all concerned, and frequently do no ultimate good even to the strikers. The important thing is to examine the reason for strikes.

## WAGES IS FUNDAMENTAL QUESTION

There is no doubt that the fundamental question is almost *always* one of wages. Yet it is not an underlying dissatisfaction with more wages but rather a dissatisfaction, due to the decrease of "real wages" (purchasing power of money wages). This decrease, in turn, is often due to the increase in the cost of living.

From 1916 to 1924 there were 24,834 strikes and lockouts. In 38 per cent of these the whole dispute concerned wages, and in 15 per cent more wages were a factor. It is significant that the greater number of disputes about wages occurred in 1917 during the first steep rise in prices, while the next greatest number occurred in 1920, the year of sudden price decline. The fewest strikes occurred in 1924, a period of stable prices. Eight per cent of all strikes are in the mining industry and 7 per cent of all strikers are coal miners. In 1917 there were 449 strikes of miners. From 1916 to 1924 a total of 280,585 coal miners struck.†

Before the war the miner had used a certain standard of living. Then came 1915 and 1916 with the sharp rise of prices. On the same money wages he found that he could not buy his accustomed quantity and quality of food, clothing and shelter for himself and his family. Moreover, the report came back to him that the operators were getting higher prices from their coal and were making more profits. Unable to gage the situation

exactly, he assumed that he must demand higher wages, and, in order to be on the safe side, he doubtless often overstepped the mark and demanded increases out of all proportion to the rise in price (the falling value of the dollar).

Then prices began to go down and the miner changed his logic. He had been getting a certain number of dollars a day, why should the operator want to give him less? The answer that coal prices had fallen, and that profits had decreased did not satisfy him. It seemed to him that it was up to "the company" and not to the workers to make good the losses. Strikes resulted.

## BLAMES FLUCTUATION OF PRICES

It is clear all through that the real trouble lay in the fluctuation of prices. If the cost of living had not increased the miner would have lost an argument for an increase in wages. If the prices had not then fallen again the operator would not have found it necessary to reduce wages. It is not, then, as some of the miners think, "profiteering by the operator," or as some of the operators think, "greed of the miner" that is really at the root of the trouble. The real culprit is often our unstable dollar. That keeps the purchasing power of both wages and profits constantly fluctuating so that gains to one party are always being snatched away to the temporary disadvantage of one and advantage of the other.

It is possible to argue that since each one gains, and then loses, he comes out the same in the end. Even though this were true, it cannot help but cause dissatisfaction to the loser. And so one party is always desiring a change which the other will necessarily oppose. The result is the tremendous social and individual loss caused by the ensuing strikes or lockouts.

When the blame has been found to rest on neither party, but rather on our unstable dollar, it should be easy to correct the trouble.

One question then becomes important; how to combat unstable money. The Philadelphia Rapid Transit Co. is struggling with this problem and is about to offer a solution more accurate than any previously attempted. In England millions of laborers have had their wages automatically adjusted by an index number of the cost of living, and during the war several firms adopted this system in the United States.

There are today, various other plans which have been devised to solve this problem. Some attempt to stabilize the dollar itself.

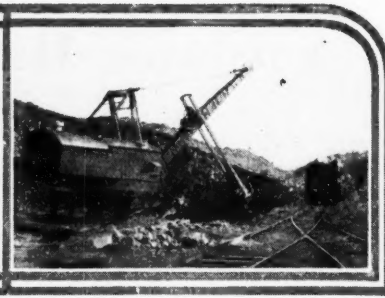
Money, our measure of *value*, is our most frequently used *measure*. Others, less important, such as the yard, the peck, the pint, the pound, etc., were "fixed" a long time ago. A yardstick that constantly changed its length is inconceivable to us today, and yet we put up with a "yardstick" of commerce that is almost never the same two weeks in succession. How long will we let our dollar have a varying amount of purchasing power? How long will we put up with a situation where one person is constantly losing when another gains; where there results friction, strikes and ultimate loss to all?

\* Coal Age, January 29, 1925.

† U. S. Monthly Labor Review, June, 1925.



## News Of the Industry



### Anthracite Men Lay Down Tools with No Prospect of Peace

**Wild Last-Minute No-Strike Efforts Fail—Operators Hope Next  
Settlement Will Provide Adjustable Wage Scale—  
Miners Like Maintenance Plan**

By Sydney A. Hale  
Special Contributor, *Coal Age*,  
New York City

The anthracite strike is on. Both sides are digging in for a long struggle, if necessary.

The suspension, predicted by pessimistic observers following the first clash of the operators and officials of the United Mine Workers at Atlantic City, N. J., on July 9, officially became effective at midnight Monday. Many workers, anticipating the formal order issued from the temporary headquarters of the union chiefs at the Bellevue-Stratford Hotel, Philadelphia, Pa., Aug. 27, began to clean up and remove their tools the latter part of last week. By Monday night the army of anthracite union workers, estimated at from 145,000 to 158,000 men and boys, had dwindled down to a few thousand maintenance men.

For a time it looked as if even this group would be called out because the operators and miners wrangled through three conferences at the offices of the Philadelphia & Reading Coal & Iron Corporation, Philadelphia, before reaching an agreement on the status of those men. As a matter of fact, the first suspension order was mailed before this agreement had been reached and was supplemented by a second order dated Aug. 28.

This second order, covering the agreement on maintenance men, contained these paragraphs:

The agreement in substance permits the continuance of necessary maintenance occupations. Maintenance men in such occupations are not to be replaced by others. Otherwise normal conditions that prevailed during idle periods in the past are to be the basis for this agreement. Any general settlement made will be retroactive to Sept. 1 affecting maintenance men. Copy of the agreement is herewith inclosed.

We consider this agreement an advanced step over similar agreements and fully protects our every interest.

Concerning the manner of handling maintenance work, we would state that all work necessary to preserve the normal conditions of the colliery, regarding ventilation, drainage and protection of property, is permitted. This involves such work as necessary engineers, boiler house employees, pump men, fuel men, electricians and those necessary to keep operating units in order.

If the operators desire that maintenance work be done not in keeping with these instructions, the mine committees are advised to take such matters up with the district officials in their respective districts before taking final action.

These strike orders were not promulgated, however, until after last minute efforts to prevent the shutdown had gone out in a burst of melodramatic cross-country chases and pre-dawn conferences. These efforts began with the creation of a Citizens' No-Strike Committee composed of business men in the anthracite region. Sneered at and frowned upon at the outset by President Lewis of the United Mine Workers, who tartly served notice on the body headed by John H. Uhl, of Wilkes-Barre, to keep its hands off, the committee persisted in its efforts. Mr. Lewis, however, finally met the committee at the Altamont Hotel at Hazleton on Aug. 25 and in an address which lasted nearly three hours, delivered a justification of the miners' position and an attack upon the operators. He said:

"If they (the operators) will withdraw their statement on record in the conference (at Atlantic City) that they will yield nothing and reject everything that disturbs the factor of mine costs, then there can be negotiations."

With this statement as its thread of hope, the citizens' committee met the operators in the Hotel Sterling, Wilkes-Barre, the following day.

Major W. W. Inglis, replying for the operators, reviewed very briefly the breaking off in the Atlantic City nego-

tiations and stated frankly that the producers were unwilling to abandon their position on increased wages, the check-off and other demands. "Our minds are not closed to meritorious demands of any kind," said the major, "and we are prepared to discuss fully such demands, but we are not willing to withdraw opposition to demands which we regard as being without reason or substantial merit."

"As to the needs of the immediate situation, we are thoroughly in accord with your desire to avoid a suspension. To that end we renew our proposal that, pending the results of further effort to draw up a new contract, the operators and miners agree that there shall be no cessation of operations. We see no good reason why there should be a strike or suspension while efforts are being made to negotiate a new agreement."

#### Inglis Interprets Answer

The committee was plainly disappointed at the answer. After a recess of an hour Major Inglis made the following statement:

"You wish further interpretation of our answer to your questions presented by you today. We hoped that you would understand our reply to mean this: In order to avoid a suspension on Sept. 1, 1925, we are willing to renew the negotiations with the representatives of the mine workers looking toward a new agreement, provided you can arrange a conference and provided further it is distinctly understood that we have not agreed to abandon our opposition to the check-off and wage increases, both of which we are willing to consider fully, but both of which we now believe to be unsound and unwarranted."

Still hoping against hope, Chairman Uhl, accompanied by Ralph A. Ammerman, another member of the committee, started out to carry this message to John L. Lewis. Mr. Lewis and a number of his associates had been attending a picnic in the vicinity of Wilkes-Barre. As soon as they learned the results of the meeting they had commenced the return trip by automobile to Philadelphia. Mr. Lewis and Vice-President Philip A. Murray led the caravan in a high-powered roadster; Secretary-Treasurer Thomas Kennedy and James L. McAndrew, secretary of District No. 9, U. M. W., followed in a smaller car.

"Half a league, half a league, half a league" more or less behind came the pursuers, Messrs. Uhl and Ammerman, in a new straight-eight roadster (name not furnished on request) with an enterprising news hound perched peril-

#### Hard-Coal Miners Off For Europe

On Aug. 24 no less than 50 miners of the anthracite fields, apparently confident the mines were to shut down Sept. 1, booked passage for Italy and other Central European countries. Most of them were happy and bore full pocketbooks. Some of them said they would take as much \$50,000 with them to invest in home-country real estate. "Can buy about my whole home town," said one. This sort of exodus to Europe occurs just before every strike. About 75 per cent of the men return.



### Anthracite Strike Chronology

The demands of the miners, which resulted in the present suspension, were framed at a convention of Districts 1, 7 and 9 of the United Mine Workers, held at Scranton, Pa., June 29 to July 3. These demands include a two-year contract, the check-off, a 10 per cent increase to tonnage men and \$1 per day to day men, equalization of rates for the same labor in individual collieries and the fixing of certain minimums, punitive overtime and payment by weight.

The chronology since July 3 has been as follows:

July 9: Joint meeting of operators and miners at Atlantic City, N. J., where President Lewis presents miners' demands and S. D. Warriner, spokesman for the operators, replies that competition makes further increases impossible; offers arbitration.

July 10: Subcommittee of general scale committee organized; committee adjourns to July 14.

July 14-17: Subcommittee meets at Atlantic City to discuss demands; operators refuse to join with miners in petition to Interstate Commerce Commission to investigate freight rates.

July 21-24: Subcommittee continues discussion of demands.

July 28-31: Subcommittee concludes consideration of first six demands.

July 31: Lewis writes Warriner demanding that he and W. J. Richards take part in negotiations.

Aug. 3: Warriner declines Lewis request; renews offer to arbitrate.

Aug. 4: Subcommittee adjourns *sine die* after operators refuse to bind themselves to wage increases and miners again reject arbitration.

Aug. 8: Warriner writes Lewis, suggesting resumption of conferences.

Aug. 9: Lewis declines to reopen negotiations unless operators change position on wage demands and check-off.

Aug. 20: Business men in anthracite region organize committee to bring operators and miners together.

Aug. 25: Lewis meets committee at Hazleton; insists operators must recede.

Aug. 26: Operators in meeting with committee at Wilkes-Barre refuse to abandon position on wage increases and check-off.

Aug. 27: Suspension order issued at Philadelphia.

Aug. 28: Status of maintenance men fixed.

Sept. 1: Strike begins.

### Pittsburgh Coal Co. Miners Form New Union

Pittsburgh, Pa., Sept. 1.—A movement that may result in highly important developments in the coal industry, particularly in the Pittsburgh district, has been inaugurated here with the formation of a new miners' union. The initial step was taken by the men employed at Banning No. 2 mine of the Pittsburgh Coal Co., at Whitsett Junction. This mine was opened recently under the 1917 scale, the first union mine in the Pittsburgh district to step into the lower wage payers.

At a meeting of the men in the Banning school house officers were elected for the local, which is designated as No. 1. Of the officers are John Mills (negro), president; M. E. Miller, vice-president, and Daniel Jefferson (negro), secretary. Albert Hillman, Morris Perkins, Blanchard McFely and Marsh Hillman were appointed to the pit committee. Charles Hill was elected doorkeeper and Andrew Wilson check weighman. E. S. McCullough, industrial aid of the Pittsburgh Chamber of Commerce, was asked to draw up a constitution and by laws for the union.

#### Will Movement Spread?

The big interest in the movement here is how far it will spread. The Pittsburgh Coal Co. on Monday morning had 155 men working in the Banning mine, it is announced. This is the highest number so far. There were 206 pickets on duty, of whom 52 were women and children. The company loaded 493 tons at the mine Saturday and expected to do as well each day the early part of this week. Up to Monday 1,600 tons of coal had been produced.

While resumption of mines in the Pittsburgh district is generally discussed, independents have thus far been unable to establish a foothold with the 1917 scale. The Pittsburgh Coal Co.'s Banning No. 2 mine at Whitsett Junction, Pa., is the only mine that has been converted. An operation near Imperial lasted two days, then quit.

### Illinois-Wisconsin Retailers Elect N. H. Kendall

Reorganization of the Illinois and Wisconsin Retail Coal Dealers' Association, one of the pioneer organizations in the field, has been effected within the last few days. I. L. Runyan, secretary of the association for the past 15 years, has retired. N. H. Kendall, for a decade commissioner of the Chicago Coal Merchants' Association and more recently with C. M. Moderwell & Co., has been named as his successor with the title of managing director. Another veteran to retire is C. S. Dodge, Monroe, Wis., who relinquishes the office of treasurer to Peter Beck, Harvey, Ill. Mr. Beck has taken an active part in association work for a number of years. Ex-President Russell H. Jones, Kenosha, Wis., has been elected to the newly created position of secretary of the board of directors. R. C. Wagner, Champaign, Ill., is president. Headquarters will be continued at Chicago.

ously in the rumble seat. It was some time before the union leaders learned that they were being pursued. By that time, a breakdown had set them out of the current of traffic and the pursuing car had thundered by unknown. The midnight hour had passed before Mr. Lewis and his friends stumbled into the lobby of the Bellevue-Stratford, tired, bedraggled and begrimed, to find a hungry twain from the Citizens' Committee waiting for them.

But even the wild ride did not persuade Mr. Lewis to recede from his position that no resumption of negotiations was possible until the operators had withdrawn the statements to which the union objected. Defeated, the members of the committee started back for Wilkes-Barre as dawn was breaking over the Susquehanna. At a meeting at Scranton, Friday night, the committee disbanded.

The issuance of the formal suspension order was met with a statement by Major Inglis denouncing the union action as subversive to the prosperity of the anthracite industry. The order, he declared, would cost the workers \$1,000,000 in wages.

"There are stronger influences at work than a desire to protect the anthracite industry and the anthracite region from the calamity of a strike," he continued. "The feeling is growing that union policy is dominated by its greater concern in soft coal affairs. This was admitted to be the case in the long strike of 1922, and it looks as though it was true today.

"Naturally, this does not lessen resentment in the anthracite region that

this calamity should come upon it. The idea that miners cannot work unless they have a contract that satisfies them in all respects is a relic of the dark ages of unionism. It must yield to reason in the end. So must the strike habit. These recurring suspensions are a curse and a reproach. They must be ended by the acceptance of a sane and reasonable method of settling differences by some form of arbitration rather than by resort to force."

The desire for arbitration was again emphasized by Mr. Inglis in reviewing the situation before a meeting of the producers held at Philadelphia on Friday. "In view of the present situation," he concluded, "your committee strongly recommends that the operators maintain a firm stand for arbitration of the present differences, to prevent a recurrence of interruptions such as the one about to start. It believes that any settlement effected should be of a permanent nature, providing for a readjustment of the wage scale from time to time, to allow of prices for our product that will enable it to move freely in competition with other fuels."

Neither statement narrowed the breach between the operators and the miners. The latter withheld any formal answer to the charges made by Major Inglis, but ridiculed the idea that the anthracite strike was undertaken to bolster up the position of the organization in the bituminous fields. The fact that the 1922 hard-coal strike outlasted the soft-coal suspension that year and the differences in the predominating sources of consumption of the two fields were offered to disprove the charge.





## Northern Producers Plan to Combat Rate Advantage Won By Southern Coal Shippers

Philadelphia, Pa., Sept. 2.—Operators representing the northern bituminous coal fields will meet at the Hotel Bellevue-Stratford this afternoon to determine what action, if any, should be taken with respect to the recent decision of the Interstate Commerce Commission opening up New England and the Middle Atlantic states to all-rail prepared sizes from the low-volatile fields of southern West Virginia. The conference, to be participated in by representatives from the northern West Virginia, Maryland, central Pennsylvania and Pittsburgh districts, will also take up the question of promoting an educational campaign to acquaint the domestic consumers of the East with the virtues of bituminous coal for household consumption.

The meeting this afternoon follows an all-day conference held here last Friday at which the Interstate Commerce Commission decision was discussed, first, by the operators, and then between the producers and officials of the Trunk Line carriers. Although no official statement of progress was issued at the conclusion of this meeting, the opinion is held by many of the coal men interested that the decision favoring the Southern fields is part of a government policy to smooth the competitive path of the non-union producers. This policy is traced back to the message of President Harding in which he declared that, except for the output from the unorganized fields, the United Mine Workers had the country by the throat, and the subsequent recommendations of the United States Coal Commission that the use of substitute fuels in anthracite-consuming territory should be encouraged.

### No Emergency Exists

The Northern operators, particularly those in the low-volatile areas, feel that the decision fails to give proper recognition to the case presented by them. While they might not object to the publication of joint through all-rail rates from West Virginia as an emergency proposition, they insist that such an emergency does not exist. Against the 500,000 tons monthly that the Commission estimated the Southern fields might add to the domestic coal supply of the Northeast, the Northern fields assert that they can produce and ship 2,000,000 tons. Routes and rates for this latter movement are already available. On the other hand, the rates ordered from West Virginia apply via the Potomac Yard and Hagerstown gateways. To throw such a movement through those gateways, they declare, would mean congestion and delay that would dilute the car supply of all mines shipping to Eastern consuming points. The differentials of 61c. to \$1.10 over Clearfield rates for distances 225 to 465 miles greater also are attacked as preferential to the Southern producers.

Three possible courses of action have been suggested, viz., to apply to the Interstate Commerce Commission either for a modification of its order, a rehearing, or a reargument of the case.



James E. Black

Who, in the absence of F. G. Tryon, who is on furlough for a brief period from the Bureau of Mines to make a study of statistics of fuel and power for the Institute of Economics of Washington, is in charge of the coal unit of the Division of Mineral Resources. Mr. Black has had long experience in coal accounting and was associated with David L. Wing in the service of the U. S. Coal Commission. Prior to his service with the Coal Commission Mr. Black was an examiner with the Federal Trade Commission.

The meetings with the railroads have been held with the hope of persuading the carriers to join with the Northern fields in whatever action may be decided upon, but the outlook in that direction did not appear bright at the adjournment of the Friday conference.

## New England Has More Coal Now than Last Year

The Aug. 25 report of Eugene Hultman, chairman of the Massachusetts special commission on the necessities of life, showed that his state on Aug. 1 had 2,625,690 tons of domestic anthracite on hand in retailers' yards or already delivered to householders, as compared with 2,576,191 Aug. 1 last year. Thus in the face of an anthracite miners' strike, Massachusetts, which sets the pace for all New England in coal consumption, was in possession of little more than an average quantity of hard coal.

### Industrial Coal Stocks Increase in July

Industries increased their coal stocks by more than six million tons in July, according to the National Association of Purchasing Agents. Larger supplies of both anthracite and bituminous coal were laid in, probably in anticipation of possible trouble in both fields. The amount of coal on hand in industries Aug. 1 is estimated by the association at 46,373,000 tons of anthracite and bituminous combined. This is sufficient to last 48 days based on the amount of coal consumed in July. Consumption in July exceeded that of June by approximately one million tons.

## Hard Coal Strike Scares Country Little This Time; Miners' Outlook Not Good

By Paul Wooton

Washington Correspondent of Coal Age

The anthracite agreement came to an end this year in an entirely different setting than did that of 1902 when President Roosevelt intervened. Then there frequently was real misery among the mine workers. Their standard of living was below that in many other industries. Then there was a great body of consumers to whom substitutes were unfamiliar and to a considerable extent unobtainable.

As the agreement wound up this year and the strike started, the mine workers were enjoying a standard of living that exceeds that of many other American industries and is so far ahead of that of any group in Europe as to be incomparable. There is no poverty or genuine grievance among them. They are prosperous and are saving money.

The mine workers have forced up the wage rate until their product has become a luxury. Incidentally they opened the way for the entry of oil, coke and high grade soft coal into what could have been kept an exclusive market. A situation has been brought about where adjustments could be made quickly were anthracite to disappear from the earth. The second winter it hardly would be missed.

Instead of finding desperate consumers pleading with federal officials for protection as was the case in 1902, the expiration of this year's agreement found the consumers in a very different state of mind. They were bending their efforts to free themselves of dependence on a single fuel. They did not want the federal government to interfere. The strike would have to last twelve months, it is believed, before any great pressure would be developed for federal intervention. When a former fuel administrator of New England—a man noted for the vigorous way in which he has championed the cause of the consumer—comes out and urges the use of substitutes, it would seem that the public will take the matter more seriously than ever before.

The mine workers also faced a different situation than ever before as the agreement expired. They had to decide between holding the high wage scale they had attained and embarking on a desperate adventure involving the possible destruction of their union and the loss of half their market. Loss of half the market would mean the reduction of the working force by 75,000 men. It would mean lowering of prices to win back what had been lost.

The anthracite situation has served to emphasize that the main objective of organized labor in this country now should be holding what it has. If an effort is made to force wages to higher levels the existing structure is likely to be wrecked. Our resources are such and the capacity of our managers and our workers is such that we may be able to maintain present standards, but it is going to be a tremendous task—one that calls for full co-operation between employer and employee.

### Stealthy Union Effort In Logan County May Be "Grandstand Play"

Is the publicity stir about organizing the Logan and Mingo Counties coal fields in southern West Virginia a "grandstand play" to appease the coal operators of the Central Competitive Field or is it business? This question is being asked generally in the coal fields of the "Little Mountain State."

Coal operators in the northern field of West Virginia who had their tussle with the union and seem to have its shoulders on the mat, say that it is a grandstand play to placate the 100 per cent organized Central Competitive Field and to make men there feel good over another attempt to organize "the citadel of non-unionism" in bituminous coal fields or what the miners sometimes call "hard-boiled non-union."

Visitation of Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, and members of the international executive board members to Logan and Williamson two weeks in succession has naturally caused a stir. These impregnable non-union strongholds have been unmolested since Keeney's armed march on Logan. Mr. Bittner and his party were requested by a committee of Logan citizens to leave there.

An effort is being made by the United Mine Workers to have John L. Lewis, international president, visit the northern West Virginia and Panhandle sections on Labor Day or soon afterward, but it is believed that he will be unable to come because of the pressure of business. If a strike is called in the West Virginia bituminous coal fields it is believed that it will not be staged until the middle of October.

#### No Settlement Reached

Several conferences were held recently with John H. Jones, president of the Bertha-Consumers Co., in Pittsburgh, but no settlement has been reached. It is believed that the company is awaiting the action of the miners incident to the expected strikes in the anthracite and bituminous fields. The Rachel mine at Downs, W. Va., continues to work non-union and the Bertha mine, near Morgantown, in northern West Virginia, continues to work with union miners, pending a settlement at Rachel.

Recently a great deal of trouble has been started in Monongah, where the municipal officials are either members or closely identified with the United Mine Workers. After being criticised in a public meeting Mayor Harry Bennett conferred with the sheriff and claims that the non-union forces were as bad offenders and law-breakers as the union miners. The sheriff agreed to post two deputies there daily. Charges were made that the town officials were not enforcing the law.

A rumor afloat that Italian miners were deserting the union was quickly denied by Nick Aiello, a former president of Sub-District No. 4, District No. 17, who is of Italian extraction. The miners claim that the story is operators' propaganda.

### Klansmen Pallbearers Bury Negro Miner

Roderfield, W. Va., witnessed the peculiar spectacle, Aug. 23, of a group of Ku Klux Klan members serving as pallbearers at the funeral of a negro miner. Samuel Obrey, the negro, was killed in a mine in Fall River and the body was sent to a Roderfield undertaker for burial. As the coffin was placed in the hearse to be taken to the cemetery a Ku Klux Klan meeting, held in rooms over the undertaking establishment, was dismissed. Noting the absence of mourners, several Klansmen boarded the hearse, while others fell in behind and marched to the cemetery, where they lifted the coffin from the hearse and lowered it into the ground.

### Soft-Coal Strike Threatens; Southwest Miners Quit

Government officials are on the anxious seat lest trouble in the soft-coal fields follow in the wake of the anthracite strike. Since John L. Lewis delivered his threat of a general bituminous strike at the tri-district convention of anthracite miners, at Scranton, last June, many local unions have notified him that they will support such action. Agents of the U. S. Department of Labor are understood to have been ordered to look into this situation.

William Dalrymple, president of district 21, comprising Oklahoma, Arkansas and part of Texas, issued a strike call at a mass meeting of miners at Hartshorne, Okla., Aug. 30, urging all union men working in mines of companies that "have repudiated their contracts," and others working at wages less than the 1924-25 scale, to cease work the following day. Three-fourths of the union miners of the district were expected by union officials to go on strike at midnight.

Dalrymple's order expressed confidence that the union would be able to win its strike and restore the 1924-25 scale.

### North American Co. to Distil Pulverized Coal

The International Combustion Engineering Corporation has contracted with the North American Co. to construct plants for low temperature distillation of coal which will greatly reduce, it is said, the fuel cost of the North American's electric power stations. The initial plant will have a capacity of 210 tons a day and will be erected at the Lakeside plant of the Milwaukee Electric Railway and Power Co., a North American Company subsidiary. Construction of this plant will begin at once. The new system distills the pulverized coal now used and the pulverized coke obtained will be burned under the boilers. The other byproducts will be motor spirits, tar and gas.

### Two Tipple Fires Blamed on West Virginia Strikers

A reign of terror broke out in the northern West Virginia strike zone late last week, when two tipples were destroyed. Fire of undetermined origin burned the tipple of Junior mine of the Harry C. Coal Co., in Keen's Run, near Everson, Marion County, between 2 and 3 a.m., Aug. 28, with a loss estimated at from \$20,000 to \$30,000. The mine owners allege that the tipple was fired by persons who did not want the mine put into operation on a non-union basis. The mine was idle for two years, but recently the mine cars were put into repair and plans were made to reopen the mine soon.

The tipple at mine No. 55 of the Consolidation Coal Co., at Meadow Brook, Harrison County, was burned down Saturday morning, Aug. 29, entailing a loss of \$40,000. In addition to the tipple the box-car loading shed and the blacksmith and machine shops fell an easy prey to the flames. The mine was not in operation and no mine guards were on duty at the plant. According to reports three men fled from the tipple soon after the fire was discovered. It was reported that the company was getting ready to reopen the mine, but this was denied by officials, according to reports.

A new daily non-union coal loading record was attained Tuesday Aug. 25, when 1,697 cars were produced. The heaviest daily loading on the Monongah Division, B. & O., was reached the same day at 965 cars.

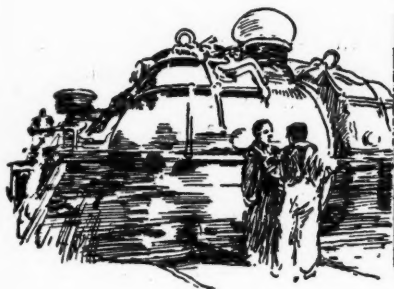
Thirty-seven striking union miners are charged with contempt of court at Grafton by officials of the Maryland Coal Co., of West Virginia. It is recalled in statements being forwarded to Judge Warren B. Knittle at Philippi, that the men solicited non-union miners working at its Wendel mine to join the United Mine Workers and leave the company's employ. The injunction granted to the company specifically restrains union officials, members or agents from doing such acts.

The Consolidation Coal Co. is dismantling mine No. 37, at Berryburg, near Philippi, and the steel is being shipped to other company mines. The reason for closing down the mine, it is reported, is that the operation cannot be worked profitably because of long hauls. The mine has been operated since 1900.

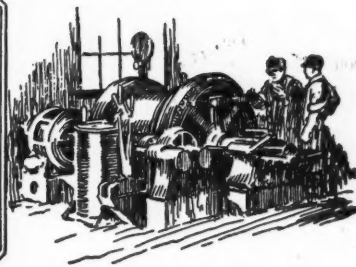
### Russians Visit Mine Fields

The Birmingham district was visited Aug. 20 by three members of the Soviet Russian Coal Commission, representing the Donugal Trust, which controls and operates the Russian coal mines. In the party were N. T. Schibaieff, N. I. Levfcheko and Z. E. Zorin, of Ukraine, South Russia. They were shown over the district and visited both coal and ore mines. The visitors were tendered a dinner during their stay in Birmingham. From Alabama they went to the Colorado coal fields. The commission in the United States consists of nine members divided into three groups in order that the coal producing centers might be visited and inspected as quickly as possible.





## Practical Pointers For Electrical And Mechanical Men



### Gravity Switching of Mine Cars Aids This One-Man Dump

At our old Detmold mine the force of gravity is being used to the utmost in handling and dumping mine cars containing slate. The mine mouth lies several hundred feet above the valley so that unlimited space for rock disposal is available. Cars of slate are switched by gravity from the trip and then allowed to drift down the rock storage track which is long enough to take 25 cars. One loaded car at a time is drifted into the dead-end type dump by one man who also disposes of the slate. After each car is emptied it is pushed from the dump and thence by gravity passes through a spring switch and onto an empty storage track.

Beneath the dump is a bin which holds about 15 mine cars of slate. This dump is equipped with an electric undercut gate. After the attendant has dumped enough slate to fill the bin, he goes below and by means of an electric larry distributes the slate on the bank of the dump. The layout is shown in the accompanying illustration.

The Detmold mine is quite old and at present is producing only about 500 tons of coal per day. At this rate of coal production about 40 cars, or about 150 tons, of slate must be

handled daily. The one man will easily dispose of this quantity in about four hours; often he has handled 80 cars of slate in one 8-hr. shift. In fact, this scheme is so ideally arranged that after the rock is switched out of the trips, we hardly realize that we have a rock dump because it gives us so little trouble.

ELKINS READ,

General Supt.

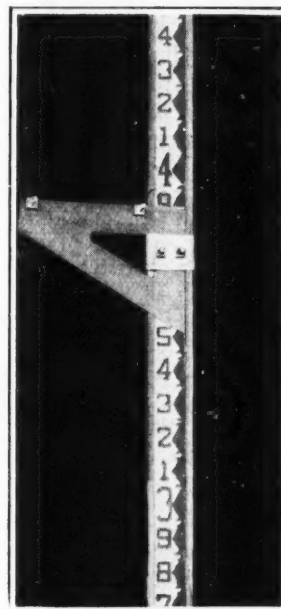
Maryland Coal Co., Lonaconing, Md.

### Home-Made Instrument Aids In Measuring Coal Berm

For ascertaining the height of a coal berm in a strip pit or that of other objects to which direct access cannot be gained so that they may be measured with a rule or tape, the device shown in the accompanying illustration has been devised by Otis Bledsoe, engineer of the Sunlight Coal Co., of Boonville, Ind. This contrivance is extremely simple and was evolved from materials partaking largely of the nature of "odds and ends" found in the coal-mine office. While it will not give results that are absolutely accurate they are sufficiently exact for all practical purposes.

The firm with which Mr. Bledsoe

is connected does much coal stripping. As the beds worked vary more or less in thickness and it is difficult if not impossible to obtain a direct measurement on the height of the berm from the footwall to the top of



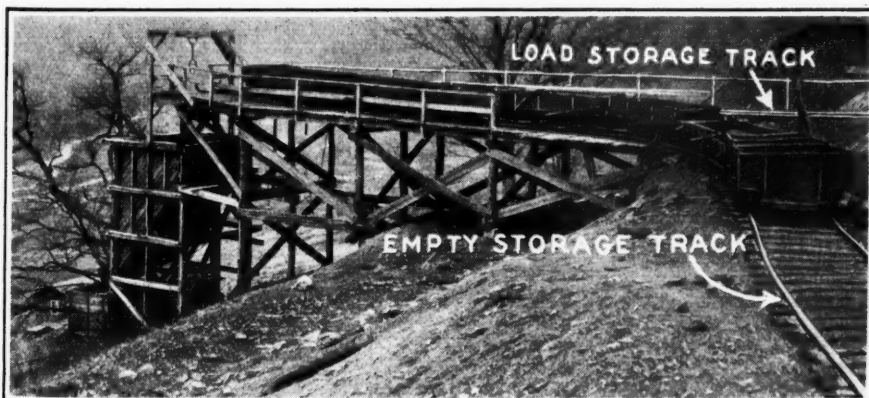
The Height Finder

To determine the height of the berm in a strip pit with this instrument it is only necessary to set the rod on the footwall, hold it vertical, sight across the two bolts projecting from the triangle, raising or lowering it until the line of sight coincides with the top of the berm. The reading of the triangle on the rod is then the thickness of the coal at that point.

the coal he hit upon this scheme.

This device consists of an old level rod, an ancient ylonite drawing triangle, a plumb bob and a metal clamp holding the triangle to the leveling rod in such a way that it may be slid up or down like a target. Two small bolts are also provided. These project from the side of the triangle close to its upper edge and serve as sights.

In use the level rod is set up on the footwall as close to the toe of the berm as possible, the plumb bob indicating when it is in a perpendicular position. The triangle is then moved up or down until the line of sight across the two bolts strikes the top of the berm. The reading of the top of the triangle on the level rod then gives the thickness of the coal.



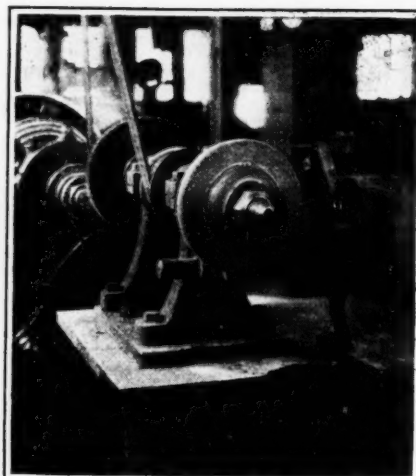
One Man Can Dump 80 Cars a Day Here

This layout increases efficiency in the handling of slate. Mine cars are switched from the trips coming from the mine and are dropped by gravity through the load storage track to a dead-end dump. After being emptied the cars are pushed off the dump and thence by gravity pass through a spring switch and descend the empty storage track.

### Scrap Heap Yielded Most of This Grinder's Parts

In the ordinary mine shop few machines are used more frequently by everybody than is the grinder. This is utilized not only for shaping edged tools of all kinds but for smoothing rough surfaces or ends, for cutting hard steel bars and the like. The grinder thus forms one of the tools that is almost indispensable in shop operation, and not a few shops use several such machines.

In the accompanying illustration may be seen a grinder employed in the No. 4 shops of the Kingston Coal Co., at Kingston, Pa. Although this machine was built up from odds and ends picked up around the shop and from the scrap heap it serves excellently the purpose for which it was intended. Briefly the mandrel for this grinder, together with the flanges that hold the two wheels, was forged and turned up in the shop. The two bearings and the pulley originally formed part of the governor of a large engine. The



#### Largely Salvaged

The two bearings and pulley were reclaimed from the scrap heap and the mandrel rest and stand made in the shop. This grinder, while not very graceful of outline, is nevertheless a sturdy and effective tool.

stand upon which the wheels are mounted is a piece of heavy pipe embedded in the concrete floor and having a rectangular piece of heavy plate cap screwed to the flange upon its upper end. The adjustable rests were made in the shop.

### Change of Foot Valve Remedies Pump Trouble

At one of the mines belonging to the company by which I am employed the power plant draws its water supply from a pumping station located about a mile away. Originally this station contained one 250-gal. pump designed for a 160-ft. head. This discharged to the power plant through a 4-in. line of cast iron pipe. When more boilers were added another pump was installed, the two machines being piped in parallel.

These pumps would not operate successfully under this arrangement so they were piped in series making virtually one 6-stage machine. The load, however, kept on increasing, the boilers were forced in order to furnish the necessary steam and more water had to be supplied. To complicate matters the water contained impurities that began encrusting the inside of the pipe until the clear bore did not exceed 2½ to 3 in. so that it became necessary to lay a 6-in. discharge line.

When this line was completed the original pump was attached to it and supplied more than enough water. The 4-in. line was then relaid to one of the other mine power plants. The second pump was connected to this line but was also piped in

This was somewhat bewildering. It looked as if the machine was not getting enough water. Accordingly the suction line was pulled up and it was found that the 3-in. foot valve lifted only about ¼ in. and inasmuch as this pump was operating under a head far less than that for which it was designed its suction was thus throttled. A new 4-in. flap check valve rectified this trouble and today the pumps work together without difficulty when discharging to a common delivery line.

GRADY H. EMERSON.

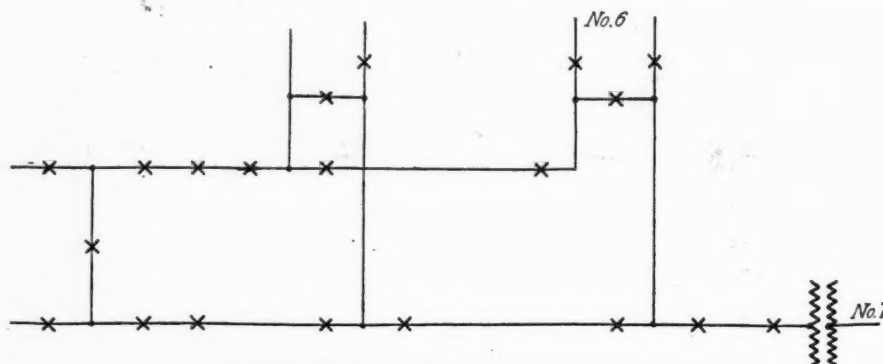
Acmar, Ala.

### Board Visualizes Circuits

The accompanying sketch shows how the electric power circuits of the Susquehanna Collieries Co. are indicated on a wooden board to assist the workmen in visualizing their arrangement. At each point marked by a cross a hole has been made in the board to show the position of a switch. Whenever a switch is closed a plug is placed in the hole, indicating a particular switch, thus designating the fact that the circuit is closed at that point.

It is always an easy matter to trace the power supply from its source to the place where it is used. In many instances there are two or more ways of supplying energy to a given point but unless other switches are properly set serious troubles may arise.

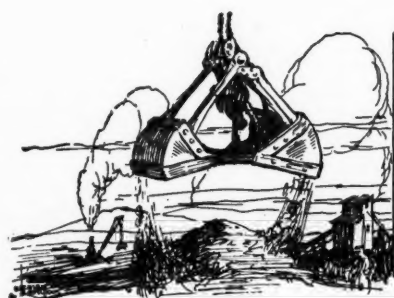
With such a diagram in front of him a substation attendant can be directed to open or close any particular switch without great liability of making a mistake; each switch is numbered and the corresponding number is marked on the board. By referring to the diagram load dispatching and repair work can be directed over the telephone with accuracy and with safety to workmen.



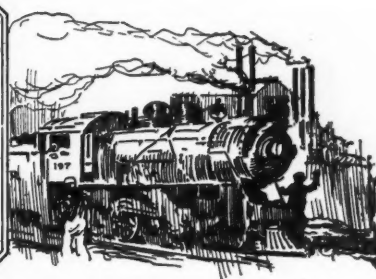
#### Power Circuit Map Shows How Loads Are Supplied

The cross marks on the diagram represent places where switches are located. Plugs inserted into these holes, which are drilled into a wooden board, indicate a closed switch.





## Production And the Market



### Soft-Coal Markets Develop Increased Strength As Anthracite Strike Begins

The long threatened anthracite strike became an actuality Sept. 1, the only uncertainty now being as to its probable duration. As a natural corollary the bituminous coal trade continues to improve, prices showing increasing firmness. Demand is especially strong, of course, for domestic varieties, but railroads, utilities and industrial consumers have not been slow to realize the importance of building up reserves and are taking larger shipments on existing contracts lest their sources of supply be menaced by nervous Eastern anthracite consumers. While the pick-up is in boldest relief in hard-coal consuming territory the betterment is not confined to any particular locality, being practically nationwide. At Cincinnati the August supply of smokeless was sold up early last week and orders were accepted only for September delivery.

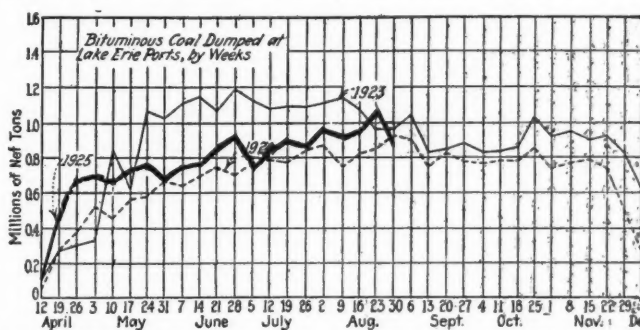
Perhaps the best feature of the upward trend in business is the fact that it is not entirely attributable to the anthracite strike as the usual seasonal pick-up has the groundwork of sound basic conditions and rather well depleted stock piles. The export situation at Baltimore also shows signs of revival, and the trade, long dormant, bears a more hopeful aspect. Lake business made a comeback when buyers showed a willingness to pay better prices for good quality coals which had been diverted to better markets for a time.

#### Hard-Coal Calm as Strike Descends

Although the promised suspension went into effect on Tuesday, as scheduled, the anthracite market has shown an unwonted absence of "runaway" characteristics. Business was brisk last week, of course, but there was a gratifying lack of soaring prices on independent coals, these operators having in many instances withdrawn from the market so far as new business was

concerned, as they were already rushed with orders. Egg and stove were in strongest demand, though orders for chestnut and pea were plentiful. Steam sizes also moved briskly with all sizes strong and prices firm, independent quotations having climbed above company schedules.

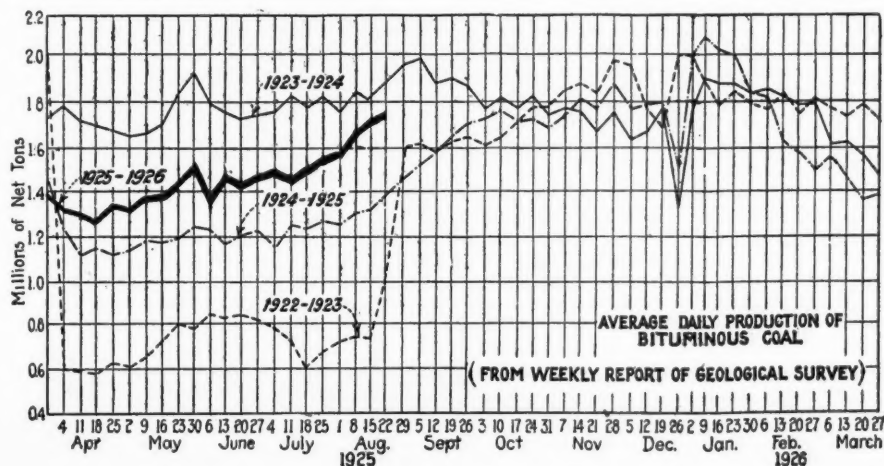
Production of bituminous coal in the week ended Aug. 22 is estimated by the Geological Survey at 10,527,000 net tons, as compared with 10,260,000 tons



in the preceding week, as shown by revised figures. Anthracite output in the week ended Aug. 22 totaled 2,209,000 net tons, the largest weekly output since Dec. 16, 1922, as against 1,904,000 in the previous week.

Coal Age Index of spot prices of bituminous coal again advanced last week, standing on Aug. 31 at 174, the corresponding price for which is \$2.10.

Dumpings at Lake Erie ports during the week ended Aug. 30, according to the Ore & Coal Exchange, were: Cargo, 859,218 net tons; steamship fuel, 50,225 tons—a total of 909,443 net tons, compared with 1,028,492 in the previous week. Hampton Roads dumpings during the week ended Aug. 27 totaled 411,814 net tons compared with 513,780 tons in the preceding week.



#### Estimates of Production

(Net Tons)

##### BITUMINOUS

	1924	1925
Aug. 8.....	8,036,000	9,971,000
Aug. 15 (a).....	8,167,000	10,260,000
Aug. 22 (b).....	8,582,000	10,527,000
Daily average.....	1,430,000	1,754,000
Cal. yr. to date..... (c)	291,364,000	306,294,000
Daily av. to date.....	1,472,000	1,545,000

##### ANTHRACITE

Aug. 8.....	1,664,000	2,067,000
Aug. 15.....	1,386,000	1,904,000
Aug. 22.....	1,711,000	2,209,000
Cal. yr. to date..... (c)	52,470,000	60,098,000

##### COKE

Aug. 15 (a).....	95,000	123,000
Aug. 22 (b).....	108,000	139,000
Cal. yr. to date..... (c)	6,794,000	6,237,000

(a) Revised since last report. (b) Subject to revision. (c) Minus two days' production to equalize number of days in the two years.

## Midwest Is Active

As viewed from Chicago the general condition during the past week in the Midwestern coal markets seems greatly improved. The demand is increasing for Illinois, Indiana and west Kentucky domestic sizes. Prices on these coals are firm, and there is a general feeling they will advance 25c. a ton at once. On west Kentucky prepared sizes, prices have reached a new high level. Operators in west Kentucky were forced to increase prices due to a drop in the price for their fine coal, which has about reached the year's lowest level. While the prepared sizes are in fairly good demand, the production of fine coal in all fields is above the present requirements. Some of the large consumers are buying heavily, while others are still holding back awaiting developments in the anthracite field. This holding off may be the cause of the prices being so extremely low on all fine coal from the western coal fields. Last week screenings, especially from Fifth Vein Indiana, sold as low as \$1.10.

The greater percentage of the operators in eastern Kentucky and West Virginia also seem to have plenty of orders on hand, owing to the fact that when buying started about three weeks ago they received more orders than they could handle. The bulk of the orders, however, will be completed between Sept. 1 and 10. Coal may then be easier to obtain. From all indications, prices on practically all

grades of eastern Kentucky and West Virginia coal will advance 25c. a ton after Sept. 1, high grade eastern Kentucky coals 50c. a ton.

The Pocahontas situation is serious. The same condition exists in the Pocahontas field as in the eastern Kentucky and West Virginia fields. Few Pocahontas operators are quoting prices, accepting orders only on the basis of price current at time of shipment, as it is their desire to clean up all the old orders first. Lump and egg, when car numbers can be given, have sold as high as \$4.50 in Chicago.

Business is good in southern Illinois. The mines are beginning to work five days a week and all sizes are moving excepting small nut and screenings. These are lagging just a little. Mines that have been idle are getting ready to start up again. Railroad tonnage is unusually good both from the strip mines and shaft mines. The strip mines are working full and crushing has practically stopped everywhere. In the Duquoin field business is picking up and there is better working time—three and four days a week—and a demand for everything excepting screenings. Duquoin prices are about 25c. to 50c. under the prices of the association members in the Franklin County field. The Carterville independents range anywhere from 25c. to 50c. under the association prices.

In the Mt. Olive field there is a crying demand for domestic sizes. Mines are working three and four days a week and even the steam sizes are finding a market. Railroad

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

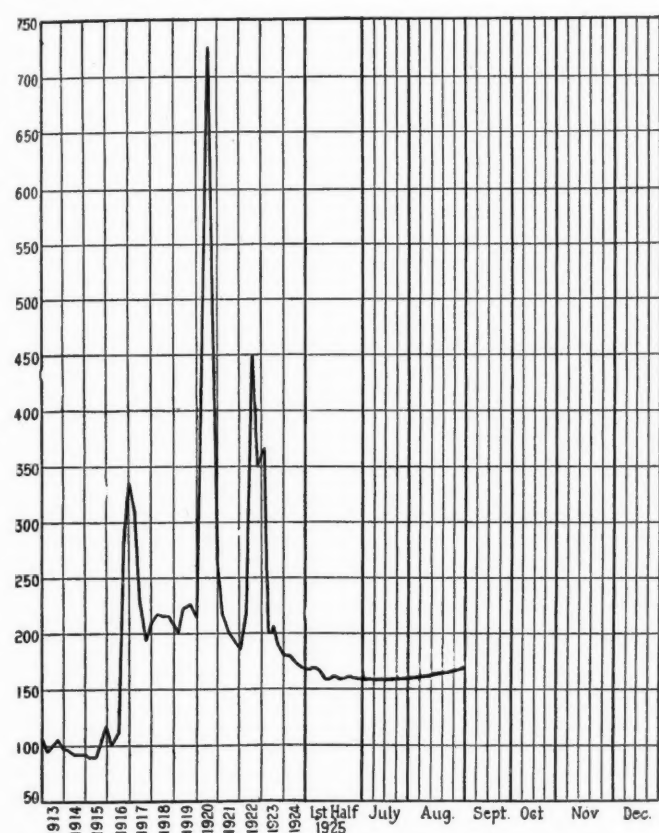
Low-Volatile, Eastern					Midwest						
	Market Quoted	Aug. 30 1924	Aug. 17 1925	Aug. 24 1925	Aug. 31 1925†		Market Quoted	Aug. 30 1924	Aug. 17 1925	Aug. 24 1925	Aug. 31 1925†
Smokeless lump.....	Columbus....	\$3.60	\$3.25	\$3.85	\$3.75@ \$4.25	Franklin, Ill. lump.....	Chicago.....	\$3.10	\$2.85	\$3.10	\$3.00@ \$3.25
Smokeless mine run.....	Columbus....	2.00	1.90	2.10	2.00@ 2.35	Franklin, Ill. mine run....	Chicago.....	2.35	2.35	2.35	2.25@ 2.50
Smokeless screenings.....	Columbus....	1.20	1.35	1.50	1.40@ 1.60	Franklin, Ill. screenings....	Chicago.....	1.65	1.95	1.95	1.65@ 2.25
Smokeless lump.....	Chicago.....	3.60	3.25	3.85	4.00@ 4.50	Central Ill. lump.....	Chicago.....	2.60	2.60	2.60	2.75@ 3.00
Smokeless mine run.....	Chicago.....	1.85	2.00	2.25	2.50@ 2.75	Central Ill. mine run.....	Chicago.....	2.20	2.10	2.10	2.00@ 2.25
Smokeless lump.....	Cincinnati....	3.75	3.75	3.75	3.75@ 4.00	Central Ill. screenings....	Chicago.....	1.55	1.55	1.55	1.35@ 1.75
Smokeless mine run.....	Cincinnati....	1.85	2.50	2.50	2.25@ 2.50	Ind. 4th Vein lump.....	Chicago.....	2.85	2.85	2.85	2.75@ 3.00
Smokeless screenings.....	Cincinnati....	1.35	1.50	1.55	1.50@ 1.75	Ind. 4th Vein mine run....	Chicago.....	2.35	2.35	2.35	2.25@ 2.50
*Smokeless mine run.....	Boston.....	4.15	4.30	4.65	4.85@ 5.00	Ind. 4th Vein screenings..	Chicago.....	1.65	1.60	1.60	1.50@ 1.75
Clearfield mine run.....	Boston.....	1.90	1.75	1.75	1.60@ 1.85	Ind. 5th Vein lump.....	Chicago.....	2.50	2.35	2.35	2.25@ 2.50
Cambria mine run.....	Boston.....	2.30	1.95	1.95	1.90@ 2.15	Ind. 5th Vein mine run....	Chicago.....	2.10	1.95	1.95	1.85@ 2.10
Somerset mine run.....	Boston.....	2.05	1.85	1.85	1.75@ 2.00	Ind. 5th Vein screenings..	Chicago.....	1.50	1.45	1.45	1.15@ 1.30
Pool 1 (Navy Standard)....	New York....	2.70	2.55	2.55	2.40@ 2.75	Mt. Olive lump.....	St. Louis.....	2.85	2.50	2.50	2.50
Pool 1 (Navy Standard)....	Philadelphia..	2.40	2.60	2.60	2.45@ 2.80	Mt. Olive mine run.....	St. Louis.....	2.50	2.00	2.00	2.00
Pool 1 (Navy Standard)....	Baltimore....	2.65	1.85	1.95	2.00@ 2.10	Mt. Olive screenings....	St. Louis.....	1.75	1.75	1.75	1.75
Pool 9 (Super. Low Vol.)....	New York....	2.15	1.95	2.00	1.90@ 2.15	Standard lump.....	St. Louis.....	2.15	2.25	2.25	2.25
Pool 9 (Super. Low Vol.)....	Philadelphia..	2.15	2.00	2.00	1.90@ 2.20	Standard mine run.....	St. Louis.....	1.80	1.80	1.80	1.75@ 1.90
Pool 9 (Super. Low Vol.)....	Baltimore....	1.85	1.75	1.75	1.85@ 1.95	Standard screenings....	St. Louis.....	1.20	1.30	1.30	1.25@ 1.40
Pool 10 (H.Gr. Low Vol.)....	New York....	1.95	1.75	1.80	1.65@ 1.95	West Ky. block.....	Louisville....	2.25	1.85	1.85	2.00@ 2.25
Pool 10 (H.Gr. Low Vol.)....	Philadelphia..	1.75	1.70	1.70	1.70@ 2.00	West Ky. mine run.....	Louisville....	1.60	1.30	1.30	1.25@ 1.50
Pool 10 (H.Gr. Low Vol.)....	Baltimore....	1.55	1.60	1.65	1.70@ 1.80	West Ky. screenings....	Louisville....	1.30	.75	.75	.65@ .85
Pool 11 (H.Gr. Low Vol.)....	New York....	1.65	1.60	1.60	1.50@ 1.70	West Ky. block.....	Chicago.....	2.30	2.00	2.25	2.00@ 2.10
Pool 11 (Low Vol.).....	Philadelphia..	1.45	1.55	1.55	1.55@ 1.75	West Ky. mine run.....	Chicago.....	1.60	1.35	1.20	1.15@ 1.35
Pool 11 (Low Vol.).....	Baltimore....	1.45	1.40	1.45	1.50@ 1.60						
High-Volatile, Eastern					South and Southwest						
Pool 54-64 (Gas and St.)....	New York....	1.50	1.55	1.55	1.45@ 1.70	Big Seam lump.....	Birmingham..	3.15	2.00	2.00	1.90@ 2.50
Pool 54-64 (Gas and St.)....	Philadelphia..	1.50	1.50	1.50	1.50@ 1.70	Big Seam mine run.....	Birmingham..	1.75	1.75	1.75	1.50@ 2.00
Pool 54-64 (Gas and St.)....	Baltimore....	1.35	1.35	1.40	1.45@ 1.55	Big Seam (washed).....	Birmingham..	2.00	1.85	1.85	1.75@ 2.00
Pittsburgh sc'd gas.....	Pittsburgh....	2.40	2.45	2.50	2.50	S. E. Ky. block.....	Chicago.....	2.30	2.55	2.80	2.60@ 3.00
Pittsburgh gas mine run....	Pittsburgh....	2.10	2.15	2.15	2.10@ 2.25	S. E. Ky. mine run.....	Chicago.....	1.60	1.70	1.95	1.85@ 2.10
Pittsburgh mine run (St.)....	Pittsburgh....	1.85	1.95	1.95	1.90@ 2.00	S. E. Ky. block.....	Louisville....	2.25	2.80	3.00	2.50@ 3.25
Pittsburgh slack (Gas)....	Pittsburgh....	1.30	1.50	1.55	1.50@ 1.60	S. E. Ky. mine run.....	Louisville....	1.50	1.55	1.60	1.50@ 1.75
Kanawha lump.....	Columbus....	2.10	2.00	2.45	2.40@ 2.75	S. E. Ky. screenings....	Louisville....	.95	1.15	1.15	1.10@ 1.25
Kanawha mine run.....	Columbus....	1.40	1.40	1.60	1.55@ 1.80	S. E. Ky. block.....	Cincinnati....	2.50	2.55	2.70	2.40@ 2.75
Kanawha screenings.....	Columbus....	1.05	1.30	1.30	1.25@ 1.35	S. E. Ky. mine run.....	Cincinnati....	1.45	1.55	1.60	1.35@ 1.75
W. Va. lump.....	Cincinnati....	2.25	2.35	2.35	2.25@ 2.50	S. E. Ky. screenings....	Cincinnati....	.95	1.15	1.15	1.10@ 1.25
W. Va. gas mine run.....	Cincinnati....	1.45	1.55	1.60	1.50@ 1.75	Kansas lump.....	Kansas City..	4.50	4.25	4.35	4.25@ 4.50
W. Va. steam mine run....	Cincinnati....	1.35	1.45	1.50	1.35@ 1.60	Kansas mine run.....	Kansas City..	3.50	3.10	3.10	3.00@ 3.25
W. Va. screenings.....	Cincinnati....	.90	1.15	1.20	1.10@ 1.25	Kansas screenings....	Kansas City..	2.50	2.50	2.50	2.50
Hocking lump.....	Columbus....	2.40	2.35	2.60	2.65@ 2.85	* Gross tons, f.o.b. vessel, Hampton Roads.					
Hocking mine run.....	Columbus....	1.55	1.55	1.65	1.50@ 1.80	† Advances over previous week shown in heavy type; declines in italics.					
Hocking screenings.....	Columbus....	1.05	1.40	1.45	1.35@ 1.50						
Pitts. No. 8 lump.....	Cleveland....	2.40	2.25	2.25	2.00@ 3.00						
Pitts. No. 8 mine run.....	Cleveland....	1.80	1.85	1.85	1.90@ 1.95						
Pitts. No. 8 screenings....	Cleveland....	1.10	1.40	1.40	1.50@ 1.60						

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

		Market Quoted	Freight Rates	August 30, 1924		August 24, 1925		August 31, 1925†	
				Independent	Company	Independent	Company	Independent	Company
Broken.....	New York....	\$2.34			\$8.00@ \$9.25		\$8.20@ \$8.90		\$8.20@ \$8.90
Broken.....	Philadelphia..	2.39			8.90@ 9.05		8.25@ 8.90		8.25@ 8.90
Egg.....	New York....	2.34		\$8.50@ \$9.00	8.75@ 9.25	\$9.75@ 10.25	8.65@ 8.90	\$10.00@ 11.00	8.65@ 8.90
Egg.....	Philadelphia..	2.39		9.00@ 9.70	9.00@ 9.05	8.90@ 9.70	8.70@ 8.85	8.90@ 9.70	8.70@ 8.85
Egg.....	Chicago.....	5.06		8.17@ 8.27	8.14@ 8.20	8.17@ 8.60	8.03@ 8.28	8.17@ 8.60	8.03@ 8.28
Stove.....	New York....	2.34		9.00@ 9.50	8.75@ 9.50	10.00@ 10.75	9.15@ 9.40	10.00@ 11.25	9.15@ 9.40
Stove.....	Philadelphia..	2.39		9.35@ 10.00	9.05@ 9.10	9.15@ 10.75	9.15@ 9.30	9.15@ 10.75	9.15@ 9.30
Stove.....	Chicago.....	5.06		8.63@ 8.75	8.50@ 8.64	8.71@ 8.90	8.48@ 8.80	10.00@ 11.00	8.48@ 8.80
Chestnut.....	New York....	2.34		8.50@ 9.00	8.75@ 9.25	9.75@ 10.25	8.65@ 8.90	10.00@ 10.75	8.65@ 8.90
Chestnut.....	Philadelphia..	2.39		8.85@ 9.80	9.00@ 9.05	9.15@ 10.15	8.85@ 8.90	9.15@ 10.15	8.85@ 8.90
Chestnut.....	Chicago.....	5.06		8.26@ 8.40	8.44@ 8.60	8.35@ 8.60	8.28@ 8.50	10.00@ 11.00	8.28@ 8.50
Pea.....	New York....	2.22		4.25@ 5.25	5.50@ 6.00	5.50@ 6.00	5.00@ 5.55	5.75@ 6.25	5.00@ 5.55
Pea.....	Philadelphia..	2.14		5.75@ 6.25	5.75@ 6.00	5.50@ 5.90	5.00@ 5.50	5.50@ 5.90	5.00@ 5.50
Pea.....	Chicago.....	4.79		5.13@ 5.45	5.36@ 6.20	5.18@ 5.36	5.05@ 5.36	5.25@ 5.75	5.05@ 5.36
Buckwheat No. 1.....	New York....	2.22		2.25@ 2.65	3.00@ 3.15	2.30@ 2.60	2.50	2.30@ 2.75	2.50
Buckwheat No. 1.....	Philadelphia..	2.14		2.50@ 3.00	3.00	2.50@ 2.75	2.50	2.50@ 2.75	2.50
Rice.....	New York....	2.22		1.75@ 2.00	2.00@ 2.25	2.10@ 2.30	2.00	2.00@ 2.25	2.00
Rice.....	Philadelphia..	2.14		2.00@ 2.25	2.25	2.00@ 2.25	2.00	2.00@ 2.25	2.00
Barley.....	New York....	2.22		1.15@ 1.50	1.50	1.50@ 1.75	1.50@ 1.60	1.60@ 1.80	1.50@ 1.60
Barley.....	Philadelphia..	2.14		1.50	1.50	1.50@ 1.75	1.50	1.50@ 1.75	1.50
Birdseye.....	New York....	2.22			1.60				

\* Net tons, f.o.b. mines. † Advances over previous week shown in heavy type; declines in italics.





Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	Aug. 31	Aug. 24	Aug. 17	Aug. 30
Index .....	174	172	167	164
Weighted average price..	\$2.10	\$2.08	\$2.02	\$1.99

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

tonnage is good. The Standard district is lagging just a little. New mines are starting up and increased working time at those in operation keeps the tonnage just a little ahead of the demand, but prices are not good—just about the cost of production. Steam is slow and hard to move. Railroad tonnage is fair. Mines are working three to five days a week.

Domestic business in St. Louis is good, especially on Illinois high-grade. Anthracite, smokeless and coke are moving slowly but Mt. Olive and Standard are beginning to pick up. Wagonload steam is quiet and carload steam is just a little under the supply. Country domestic business is unusually good on all sizes and is turning from high grade to middle grade on account of the high prices. A lot of eastern Kentucky coal is moving into central Illinois and Iowa territory and a lot of western Kentucky into the Missouri territory. Retail prices will be advanced Sept. 5.

### Kentucky's Trend Is Upward

The eastern Kentucky coal market remained unchanged over the week as the operators had poked it up to a point where production was meeting with plenty of competition from the big union mines north of the Ohio River. It has been contended that when eastern Kentucky hit a peak of \$3 a ton, the advance would stop. However, the anthracite strike may raise this maximum a little.

During the week the western Kentucky market, which has been advancing slowly but surely for several weeks, took another spurt, prepared prices advancing, along with mine run, while screenings are a shade weaker in that field, due to strong production. Although the strike of 1924 was never officially adjusted, the miners returned to work in most plants, and are too busy to become troublesome.

Eastern Kentucky is still quoting some 4-in. block at

\$2.50, principally in the Hazard field, but most coal of this size is selling at \$2.75@\$3, with specialty fuels at \$3.25. Egg and lump are \$2.25@\$2.50; nut, \$2@\$2.25; mine run, \$1.50@\$1.75; screenings, \$1.10@\$1.25. Western Kentucky 6-in. block is as high as \$2.50, general quotations being \$2@\$2.25; egg and lump, \$1.85@\$2; nut, \$1.40@\$1.75; mine run, \$1.25@\$1.50 and screenings, 65@85c., the bulk of screenings moving at 75c. or better.

### Northwest Trade Brisks Up

Dock operators at Duluth and Superior experienced better all-round interest in the market during the last few days. Cooler evenings after a long heated term are stimulating domestic demand. The near approach of the threatened strike of anthracite miners served to bring in more orders for hard coal from dealers over the Northwest.

From present indications, strike or no strike, there will be a greatly increased turnover of Pocahontas and other smokeless coals on the Head-of-the-Lakes market during the fall and winter months. Retail yards already have batches of orders for those coals booked from consumers who had up to the present never taken anything else than anthracite. Some dock officials think they are likely to run short of Pocahontas coal and they have been pressing their mines connections for further shipments. Two price advances in lump, egg and stove sizes of Pocahontas totaling \$1 during the last three weeks, brings the dock figure up to \$8. Mine run and screenings are unchanged at \$5.25 and \$4.25 respectively. Slightly better ordering of bituminous coals was reported from industrial quarters.

Allowing for a final 10c. advance, anthracite prices as of Sept. 1 are: Egg, \$13.10; stove, \$13.50; nut, \$13.35; pea, \$10.10, and buckwheat, \$8.50. Receipts of anthracite have been from one to two cargoes weekly. Hard coal on the docks has been cut down to around 375,000 tons.

The movement of coal from the East is continuing in good volume to this market. Forty-one cargoes, including two of anthracite, were unloaded at the docks during the last week and ten cargoes, all anthracite, were en route.

Managers of coal docks and retail dealers at Milwaukee report a brisk demand for fuel—not particularly for anthracite, as might be expected as a result of apprehension over labor conditions at the mines, but for bituminous coal, which is going out freely to consumers in the Northwest. Beginning this week, retail dealers advanced Pocahontas, making egg \$11.75 shoveled and \$12.50 carried to bins; nut, \$10.75 and \$11.50 respectively, and mine-run, \$8.50 and \$9.25. Hocking egg and nut were marked to \$8 and \$8.75, and splint to the same figures. Receipts by cargo for the season to Aug. 27 total 2,104,048 tons. Receipts of anthracite are 7,378 tons short of the receipts up to the same date last year, but the receipts of bituminous coal are 368,793 tons greater than in the corresponding period in 1924.

### Southwest Trade Improves as Fall Nears

The approach of fall is improving the Southwestern market, but only Kansas of the Southwestern states is prepared for full production. Few mines are operating in Missouri. The McAlester (Okla.) district is more or less stable with a 1917 wage scale, but in the Henryetta field union opposition to the 1917 scale, which has not completely stopped production, is preventing profitable operation. In Arkansas, where some pay the 1917 scale and others operate under that of 1924, some of the largest operating companies of the Southwest have made no move to reopen their mines.

The Colorado coal market continues to show considerable improvement. Many large shippers are working to full capacity and orders are being booked for late October and November delivery, which is unusual for this time of the year. August production was the heaviest in years. Inquiries are coming from sections that this field has never been able to reach before. Prices were revised Sept. 1 as follows: Walsenburg fancy domestic lump was advanced 25c. to \$5.50; washed nut is \$4.75; washed pea, \$3.25; high-grade Crested Butte anthracite Nos. 1 and 2, \$7.25, and Nos. 3 and 5 (base burner size), \$7.75.

The winter storage business in Utah seems to have really commenced at last. It is not heavy, however. There might not have been any appreciable winter storage business for heating purposes yet had not the fall weather been a little early this year. Prices remain as steady as ever. It is almost a year since the last major change.

### Trade Notably Active at Cincinnati

In the Cincinnati market the supply of smokeless coals was practically sold up for August early last week and standard operators were accepting business for September delivery at a contract price of \$2.25 for mine-run and \$3.75 for lump and egg. Little if any smokeless domestic was sold on the domestic market.

Steam and byproduct coals have been much more active on this market and it is apparent that considerable buying is being done for reserves, influenced by the threatened tie-up of anthracite production in the East. Buyers are operating cautiously but are steadily increasing their orders.

The demand for high-volatile domestic coals was not so keen during the last week, perhaps because of the warmer weather. There was no trouble in selling the entire production, however, the feverish call alone being missing. Prices held firm all along the line.

There was an increase of production for the week in all the districts. The C. & O. carried in excess of 24,000 loads and other coal roads broke records. Approximately fifteen thousand coal loads passed through the Cincinnati gateway last week for the North and West, which was a gain of about 1,100 over the preceding week.

Lake shipments, which had fallen off for a few weeks because coal production was diverted to better markets, showed a disposition to come back, due to the willingness of lake buyers to pay a better price for coals of satisfactory quality. There were 3,831 lake loads through the Cincinnati gateway, a gain of 479 over the previous week.

Tidewater demands for smokeless mine-run are getting better all the time and the low stocks in the face of this call are helping the price. A considerable tonnage sold at \$4.85 during the last week.

Cincinnati retail dealers are getting \$8.50 for smokeless lump and egg, an advance of \$1. Some dealers have added 50c. to the price of high-volatile block, but this is not general as yet.

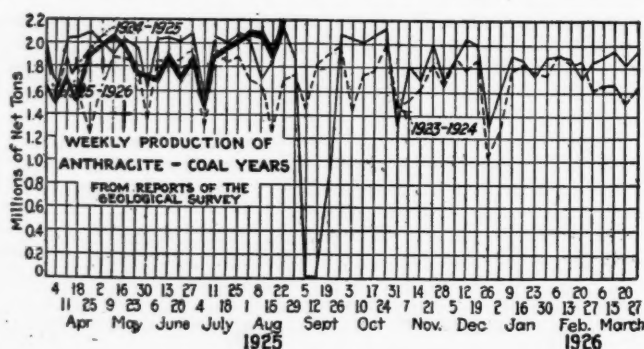
Domestic trade at Columbus continues active. More mines are opening. Retailers are buying fast and requesting immediate shipment. Producers and distributors from West Virginia and Kentucky are taking new orders only for delivery after Sept. 15 as all of the output has been disposed of up to that time. Advancing prices are noted in all fields.

Up to Aug. 15 there was only about 20 per cent of the fuel required for householders delivered in Columbus and many other cities and towns in Ohio. This, of its own accord, would naturally stimulate the domestic trade. Retailers are advancing prices in sympathy with the higher levels at the mines. Smokeless is selling from \$8.25 to \$8.75 and splints from \$7.25 to \$7.75 and in some cases even higher. Hocking lump has not shared much in the general advance but sells for \$6@6.75 depending on preparation.

Steam trade has not shared in the general strength of domestic sizes. Buying is still rather haphazard and much of it is from hand to mouth.

Production in the southern Ohio field is increasing, especially in the Pomeroy Bend section, where more mines are being put into operation, mostly on the 1917 wage basis.

The anthracite trouble has greatly stimulated operations and the market in eastern Ohio. Smokeless has stiffened sharply and mine prices both on Pocahontas and West Virginia splint are now \$1 to \$1.50 above those of a month ago. Steam inquiries are more numerous and railroads, public utilities and manufacturers are increasing their supplies. Output in eastern Ohio during the week ended Aug.



22 totaled 261,000 tons, or about 37.3 per cent of potential capacity. This is 11,000 tons over the preceding week but 35,000 tons under the corresponding week a year ago.

### Pittsburgh Prices Firmer

Coal prices at Pittsburgh have made no definite advances of importance but they show a firmer tone. Coal moves readily now whereas until recently it was either difficult or impossible. The increase in buying is wholly within the normal market area for Pittsburgh district coal. Former buyers probably are consuming a little more and are now stocking in a moderate way. The anthracite situation stimulates this. Buying of domestic coal by retail dealers is fully as heavy as would be expected at this time of year.

There are no further developments in wage and labor matters. The coal trade at large considers the starting of the Banning mine by the Pittsburgh Coal Co. a small event. It is almost on the fringe of the district and is near the Washington Coal & Coke Co.'s operations—always non-union—and near the Bethlehem Steel Corporation mines, which recently became open-shop.

In spite of the anthracite situation soft coal shows no local disturbance at Buffalo. None is anticipated unless a hard-coal strike runs a month or more. West Virginia is still trying to advance its bituminous prices, especially on lump, but Buffalo shippers say they cannot get any more for it. Gas slack is still scarce and lump is not plentiful, but the consumers object strongly to paying any increase for them.

Bituminous quotations are still \$1.60@1.75 for Fairmont lump, \$1.40@1.50 for mine run and \$1.25@1.40 for slack, on the \$2.39 rate; \$2.25@2.50 for Youghiogheny gas lump, \$2@2.25 for Pittsburgh and No. 8 steam lump, \$1.30@1.60 for slack, on the \$2.24 rate; \$1.75@2 for Allegheny Valley mine run, on the \$2.09 rate. No. 8 is scarce because so many mines are closed.

### Firmness to Last in New England

Now that the anthracite suspension is a fact the New England trade feels the present firmness in bituminous is likely to continue. Prices on prepared coal in the West have advanced sharply as anthracite shipments have diminished, and while there is as yet no material increase in demand here for mine-run for steam purposes the Hampton Roads basis is decidedly up from quotations of a week ago. It is understood that \$4.75 was paid several days ago by large interests, and that \$4.85@4.90 is the current level, with occasional sales at \$5. Several of the larger distributors as well as certain of the agencies have been obliged to buy small tonnages to complete cargoes, and on these lots the price has been quite as firm as any in the open market.

On cars Boston and Providence both Pocahontas and New River are in reasonably good request at \$5.90@6, an advance of more than 50c. within a few weeks. This has induced many consumers to put in coal where otherwise they would have waited until fall. Receipts are not large and all factors are moving their summer accumulations with little or no difficulty.

In the quality grades from central Pennsylvania there are signs of renewed interest, but at this writing what demand there is has arisen west of the Connecticut River. The on-car level of Pocahontas and New River at New Haven, Providence and Boston is not yet high enough or hard enough to warrant purchases all-rail in tidewater territory. Even on the low basis quoted per net ton f.o.b. mines the superior coals in Pennsylvania are still out of line with those from the smokeless districts.

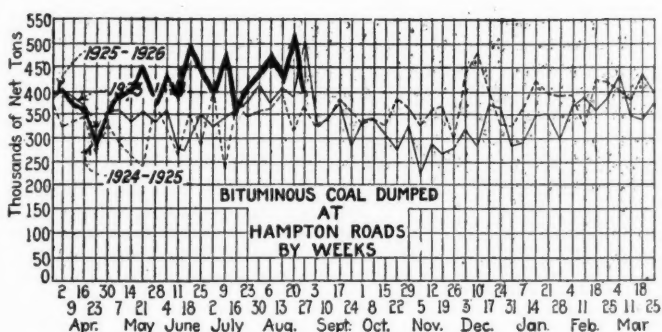
The trade is awaiting with considerable interest whatever developments may follow with respect to prepared Pocahontas and New River all-rail as a substitute for anthracite. There is a feeling that unless there is an acute shortage of the latter the delivered cost will be too high to make the West Virginia screened coal attractive.

### Market "Looks Up" in New York

The bituminous coal market at New York is "looking up." Demand continues to grow slowly but surely and local houses believe the industry has turned the corner. There is not so much free coal around because of the heavy Western demand. Some operators have been able to get a slightly higher price for the better grades.

High-volatile coals are in a better position due to lake demand. Advances of from 10c. to 15c. over last week's quotations are asked by local shippers.





Coal at the piers is commanding a better position. Demand is better and an occasional higher price is reported.

The Philadelphia soft coal market gathers strength. Producers of better grades report themselves well sold up. Some of them refused a week ago to take any more business for August and were also unwilling to quote a price beyond the end of the month. They are trying for the anthracite market with only moderate success thus far. This is also true of those in the coke trade who specialize in sized coke for home use. Contract customers are calling for their coal. Shippers are not contracting any more tonnage.

Bituminous coal at Baltimore after many weeks of almost continuous quotations at the same low rate, is now advancing. Practically all grades of steam and gas coals are 10c. higher at the mines. Production is still more than abreast of demand, but surplus stocks in the East are lessening rapidly. The export situation is reviving. During the last week of August there were three clearances, principally for Italian ports, with 21,246 tons cargo and 1,940 tons in bunkers.

### Birmingham Market Strengthens

The Birmingham market is improving steadily. Buying of domestic coal has begun in a small way and quite a few orders are being taken from the smaller towns and communities in the territory for spot shipments. Dealers in Texas also are buying in Alabama. Shipments to dealers on contract have improved, though restrictions to some extent are still effective. The retail trade, however, is still far from satisfactory. Little household coal has been stored as yet.

Steam power plants throughout this and adjoining states are now operating full time. The severe, prolonged drought has badly crippled the operation of hydro-electric plants. Large consumers are expected to begin the stocking of a reserve supply in the near future. The bunker trade is normal.

Quotations on steam coal have firmed up during the week. The better grades of washed coal are in strong demand. Domestic sizes showed the customary Sept. 1 increase. The district output for the week of Aug. 15 was 389,000 net tons, an increase of about 42,000 tons over the same week a year ago.

Demand for foundry coke is stronger at \$4.50@\$5 per ton ovens. Nut and egg coke also are moving very well.

### Anthracite in Sharp Demand

Considerable activity existed in the anthracite market at New York last week. Buyers were everywhere in evidence and retail dealers willingly stored all shipments. A few hundred loaded boats were in the harbor but they belonged to retail dealers who anticipated a shortage after Sept. 1.

The larger companies continued to take care of their regular customers as best they could. Independent operators were rushed with orders, many of them having already withdrawn from the market so far as new business was concerned.

Egg and stove sizes were most in demand, although there was a heavy sprinkling of chestnut orders. Pea coal was in heavy call, wanted mostly by inland dealers.

Firmness marked the steam coals. All sizes were strong and quotations for independent product higher than company schedules.

In spite of the strike the Philadelphia market still has a spirit of calmness. Business is active, however. Dealers have all received a little bit more coal than they had anticipated. There is an inclination in some quarters to quietly

complain of preparation. Possibly most of this is due to the increased quantity of washery coal that is coming to market, and in addition it is felt that breakers are also running through a bit of bank coal.

Retail prices have not changed. Of course there will be no announcement of September prices by the companies inasmuch as they will have no fresh-mined coal for sale. However, a few of the larger concerns with a light tonnage of egg, stove and nut in storage, and a good stock of pea, will ship these sizes until they are exhausted. All steam sizes are moving briskly, with the independents all sold up. There are no premium prices of moment.

The Baltimore anthracite situation is naturally made interesting by the hard coal strike. While coal is still coming through on delayed shipments, nobody is taking orders at the rates offered at the mines a week ago, and no one is guaranteeing deliveries. Independents raised prices all the way from 50c. to \$1.25. Meanwhile, the retail dealers in Baltimore are not excited. Between 60,000 and 70,000 tons are on hand. September prices have not been set.

The anthracite situation at Buffalo is of course much strained, for the demand is strong. Distributors say that they could sell several times as much old line company coal as they can get. The independent trade is booming, but the volume is not great. The premium is from \$2 up. Sales are made when a consumer or dealer gets tired of waiting for company coal.

Lake shipments have dropped down to a single dock and that is not running fast. Clearances for the week were 26,100 tons, of which 16,400 tons went to Milwaukee and 9,700 tons to Duluth.

### Connellsville Coke Active Again

Week before last Connellsville furnace coke had its sudden spurt, spot coke going from \$3 to \$3.25, while two fourth-quarter contracts were made at \$3.50 and \$3.75 respectively. Last week the market was dull, with no change in prices. This week the market has been active again, as to spot and early shipment.

Buying has been almost entirely by Eastern consumers, some of them not regular patrons of the region. The turnover has not been large compared with the volume moved sometimes when blast furnaces are buying, but it is a distinct improvement over the low production rate the region has had for months past. The production lately has been well balanced by contracts with furnaces, either for the current quarter or for the half year, leaving little coke to spare, while operators are indisposed to blow in ovens except as they see clear prospects of being able to dispose of their coke for some time.

The buying, therefore, has sent prices upward. Sales in the past few days have ranged from \$3.35 to \$3.65, last week's price of \$3.25 being out of the question. Price has varied in individual transactions according to tonnage, period and keenness of buyers. Spot lots brought the lower prices; deliveries over a week or two the higher prices. The market is \$3.35@\$3.65, but this should be designated as spot and prompt rather than as merely spot.

There is nothing new in fourth-quarter contract furnace coke. Foundry coke is scarcely more active than it has been lately. It would take a good deal of activity to make foundry coke follow furnace coke. The spot foundry coke market is still \$3.75@\$4.25, but is firmer.

The coke trade at Buffalo is not active. It will probably wait till the furnaces start up. There is much preparation for turning out a larger supply anticipatory of a heavy household trade. Most of the local byproduct oven companies have appointed special salesmen for their surplus. It is said that a good part of the increased bituminous output is going into coke.

### Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Aug. 15, 1925.....	1,064,793	190,979
Previous week.....	1,051,611	189,761
Week ended Aug. 16, 1924.....	953,402	142,263

	Surplus Cars	
	All Cars	Coal Cars
Aug. 14, 1925.....	217,190	62,058
Aug. 7, 1925.....	238,876	72,054
Aug. 15, 1924.....	278,476	127,801

Car Shortage	
.....	.....
.....	.....
.....	.....

## Foreign Market And Export News

### Britons Want Prices Cut Because Of Government Subvention

The Welsh coal trade is in a difficult and unsettled state following the wages negotiations. Operators are short of orders and constantly exposed to the "bearing" tactics of prospective buyers, who are trying to take advantage of the government subvention to obtain a substantial cut in prices.

Consumers both at home and abroad had previously laid in stocks of coal against a stoppage and they are in no need of purchasing immediate supplies. Some of the pits previously closed down have been reopened and more pits are working longer hours than before the negotiations.

Business at Newcastle for August and early September shipment is bad, home business is slow and export trade is difficult to obtain. The entire trade is purely from hand to mouth and at the moment there is little prospect of any fresh business. The Finnish State Railways have contracted for 16,000 tons of D.C.B. steams at 21s. per ton, c.i.f. Helsingfors. Beyond this there is no contract to report.

Output in Great Britain executed a poor come-back after the week of the August bank holiday, attaining a total of but 4,370,000 tons, according to *Coal Age's* special cable. Cardiff coals last week declined in price from 6d. to a shilling, but Newcastle maintained the levels of the week before.

### The French Coal Market Prices Advance Steadily

In spite of the fact that British collieries resumed work Aug. 3, coal business in the Sarre is lively enough. Sarre collieries had to raise their prices Aug. 1 and will probably have to increase them again so as to offset the 5 per cent wage increase which has been granted the miners. So it is to be expected that competition, from that side, will be less fierce in France.

Industrial fuels show a slight improvement. However, consumption of industrial grades does not absorb the total French output. August brought with it symptoms of a rally in domestic business but normal business activity will not be resumed before mid-September. Semi-bituminous sized fuels

are extremely firm, and bituminous screened rather neglected.

Shipments have been hampered by the lack of cars. Freight on the waterways, in consequence, has seen an increase.

During July the Office des Houillères Sinistrées received from the Ruhr 671,500 tons of indemnity fuels, including 378,100 tons coal, 264,500 tons coke and 28,900 tons lignite briquets, making a daily average of around 21,600 tons.

### U. S. Coal Exports Increase Heavily in July

Total exports of bituminous coal from the United States during July, 1925, amounted to 1,648,395 long tons, the heaviest exports of any month since September, 1923, according to the Coal Division, Department of Commerce. This figure compares favorably with the 1,435,973 tons exported in June and the 1,356,933 tons in May. Exports to Canada totaling 1,310,052 tons were the highest monthly shipments to that destination since September, 1923, and are largely responsible for the heavier total exports.

Total exports of anthracite totaled 462,676 tons compared with 313,535 in June. The July exports were the heaviest monthly shipments since June, 1921, and the second highest since August, 1920. This large increase is due mainly to heavier exports to Canada, 442,906 tons being shipped against 303,000 in June.

### No Strength Yet in Belgian Industrial Coal Market

The Belgian market for industrial fuels continues weak. Rebates are conceded nearly everywhere; in the Borinage, for instance, one shipper has applied decrease rate of 3 fr. on the greater part of industrials destined to the glass-making industry; and even greater rebates than this have been noticed. Coke reductions are noted also. Importers of British coals are disposed to cut prices to compete with German fuels. This has an unfavorable influence on the Belgian market. Home-fuels, however, remain relatively firm.

### Havana Imports More Coal

Coal and coke imported through Havana, Cuba, during the first half of the current year, as compared with the same period of the two previous years by months, was as follows:

	1923	1924	1925
	Long tons	Long tons	Long tons
Jan. ....	43,447	53,596	46,381
Feb. ....	60,968	35,863	37,462
March ...	49,335	34,215	39,125
April ....	41,800	38,751	53,062
May ....	38,759	21,514	43,046
June ....	46,000	34,908	36,935
Total ...	280,309	218,847	256,011

### Export Clearances, Week Ended Aug. 29, 1925

FROM HAMPTON ROADS		Tons
For France:		
Fr. Str. P. L. M. 13, for Rouen.....		5,634
Nor. Str. Hellen, for Marseilles.....		6,325
Fr. Str. P. L. M. 16, for Rouen.....		5,626
For Brazil:		
Br. Str. Baron Inchcape, for Rio de Janeiro.....		8,862
Ital. Str. Carnia, for Rio de Janeiro.....		6,883
Br. Str. Boyne, for Rio de Janeiro.....		5,803
For Italy:		
Ital. Str. Sile, for Porto Farraio....		9,655
For French West Indies:		
Br. Str. Trafalgar, for Port de France.....		6,995
For Cuba:		
Br. Str. Berwindmoor, for Havana..		9,162
For Africa:		
Ital. Str. Fortunato, for Dakar....		6,028
For New Brunswick:		
Br. Str. Glenardie, for St. Johns....		6,419
FROM BALTIMORE		
For Italy:		
Greek Str. Anna, for Naples.....		7,458
Ital. Str. Uguaglianza, for Genoa....		6,289
For Canada:		
Br. Str. Kilnsea, for Quebec.....		7,499

### Hampton Roads Pier Situation

(Gross Tons)		Aug. 20	Aug. 27
N. & W. Piers, Lamberts Pt.:			
Cars on hand.....		1,316	1,618
Tons on hand.....		82,776	101,791
Tons dumped for week.....		168,183	149,926
Tonnage waiting.....		10,000	14,000
Virginian Piers, Sewalls Pt.:			
Cars on hand.....		835	700
Tons on hand.....		59,750	55,550
Tons dumped for week.....		98,435	95,437
Tonnage waiting.....		13,118	23,550
C. & O. Piers, Newport News:			
Cars on hand.....		2,075	2,112
Tons on hand.....		103,775	106,290
Tons dumped for week.....		192,114	122,328
Tonnage waiting.....		12,825	9,900

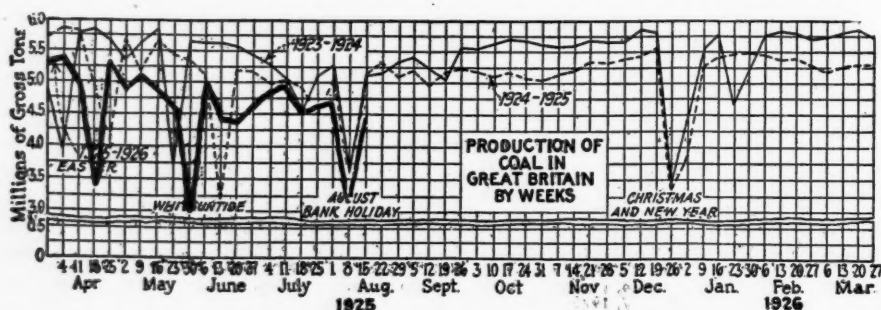
### Pier and Bunker Prices, Gross Tons

PIERS		Aug. 22	Aug. 27
Pool 1, New York.....	\$5.25@ \$5.55	\$5.35@ \$5.60	
Pool 9, New York.....	4.75@ 5.00	4.85@ 5.00	
Pool 10, New York.....	4.50@ 4.65	4.50@ 4.65	
Pool 11, New York.....	4.25@ 4.50	4.25@ 4.50	
Pool 9, Philadelphia.....	4.65@ 4.90	4.80@ 5.00	
Pool 10, Philadelphia.....	4.35@ 4.55	4.50@ 4.70	
Pool 11, Philadelphia.....	4.25@ 4.30	4.30@ 4.55	
Pool 1, Hamp. Roads.....	4.40	4.50@ 4.75	
Pool 2, Hamp. Roads.....	4.25	4.60@ 4.85	
Pools 5-6-7, Hamp. Rds.....	4.15	4.60	
BUNKERS			
Pool 1, New York.....	\$5.50@ \$5.80	\$5.60@ \$5.80	
Pool 9, New York.....	5.00@ 5.25	5.10@ 5.25	
Pool 10, New York.....	4.75@ 4.90	4.75@ 4.90	
Pool 11, New York.....	4.50@ 4.75	4.50@ 4.75	
Pool 9, Philadelphia.....	4.80@ 5.05	5.00@ 5.20	
Pool 10, Philadelphia.....	4.60@ 4.80	4.70@ 4.85	
Pool 11, Philadelphia.....	4.45@ 4.65	4.55@ 4.75	
Pool 1, Hamp. Roads.....	4.50	4.60@ 4.85	
Pool 2, Hamp. Roads.....	4.35	4.70@ 4.95	
Pools 5-6-7, Hamp. Rds.....	4.25	4.70	

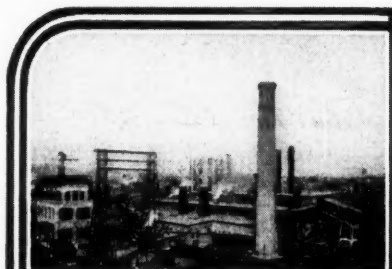
### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to Coal Age		Aug. 22	Aug. 27†
Cardiff:			
Admiralty, large.....	25s.	24s. @ 24s. 6d.	
Steam smalls.....	13s. 6d. @ 14s.	12s. 6d. @ 13s.	
Newcastle:			
Best steams.....	16s. 3d.	16s. 3d.	
Best gas.....	24s. 9d.	24s. 9d.	
Best bunkers.....	17s. 9d.	17s. 9d.	

† Advances over previous week shown in heavy type; declines in italics.







## News Items From Field and Trade



### ALABAMA

James W. Whatley has resigned as manager of sales for the DeBardeleben Coal Corporation after a service of about two years. Prior to going with the DeBardeleben corporation, Mr. Whatley was in charge of coal and coke sales for the Tennessee Coal, Iron & Railroad Co. for the greater part of his twenty years service with that company, and is regarded as an authority on questions of fuel salesmanship. Mr. Whatley has not announced his future plans.

The Sloss-Sheffield Steel & Iron Co. will soon complete the connecting links at each end of the Praco branch of the Louisville & Nashville R.R. which will enable the company to handle the output of its Flat Top mines direct from the operation to its large byproduct plant at North Birmingham, with its own equipment and crews, effecting an enormous saving in freights. Trackage rights were obtained from the Louisville & Nashville R.R. by an agreement effected some months ago.

The Roden Coal Co., with mines at Marvel, Bibb County, has adopted a novel and effective plan of placing the good qualities of its domestic coal in the public eye and mind by the erection of a large electric sign on the Roden Building, Second Ave. at Twentieth St., Birmingham, the most strategic point in the business section. This sign is 33 ft. wide and 26½ feet high and intermittently flashes an advertisement of the merits of the celebrated Marvel product, which is extensively used throughout southern territory.

### COLORADO

Carl De Lockte has been appointed by Governor Morley to serve on the Industrial Commission to fill the vacancy created by the death of Mr. Saunders.

### ILLINOIS

Franco No. 3 mine, employing 300 men, has resumed hoisting coal, after having been idle all summer. It was announced that the reopening was made possible by increased orders from mail-order houses in Chicago. An agreement has been reached whereby the miners will be equipped with electric lamps.

A petition asking authority to dispose by public sale of all the properties of the Southern Gem Coal Corporation and the Southern Gem Coal Co. was filed in United States court at East St. Louis, Aug. 22, by W. S. Wilson of Pinckneyville, and N. C. McLean

of East St. Louis, Mo., as receivers. Judge George W. English set Sept. 2 as the date for the hearing. The receivers point out that all negotiations and conferences to rectify the concern's affairs have proven futile. They also state that in spite of the appointment Jan. 26 of receivers that the company's debts, which had been estimated at three million dollars, have continued to increase. The companies own coal mines in Franklin and Perry Counties.

Two mines, A of the Central Illinois Coal Mining Co. and Woodside Mine No. 53, at Springfield, Ill., have resumed work after having been closed for several months. Three hundred miners are on the job in the two.

The construction of a steel tippie and the setting of two boilers is in progress at the new coal mine opened on the Santa Fe Ry. north of Knoxville, and east of Galesburg, by the Galesburg Coal Co.

Glen Young, mine boss at one of the Taylorville mines, and a group of associates have leased the mine of the Assumption Coal and Mining Co., at Assumption, seven miles north of Pana, and plan to reopen it employing 100 men.

The Macon County Coal Co. of Decatur, and the Decatur Coal Co. have been merged into one corporation each company retaining its identity and continuing under its own name. The capital stock of the Macon County company formerly \$200,000 will be increased to \$500,000 after the \$100,000 capital stock of the other company is included. Stockholders in the Decatur company will receive Macon County Coal Co. stock for their interests. W. J. Grady will head the new company as president, with C. F. Mattes, vice-president and J. N. Baker, secretary-treasurer. John Armstrong, former president of the Macon company becomes a director of the consolidation, as does David W. Beggs, who was president and general manager of the Decatur company. Other directors are: W. J. Grady, C. F. Mattes, W. S. Ridgley, E. D. Mattes, S. D. May, Forrest File, F. A. Tuttle and John Diller.

Owen M. Fox has left the Black Diamond to become executive vice-president of the Chicago Coal Merchants' Association.

William Mauch, of Danville, a veteran coal operator in the Danville district for many years, has been appointed mine inspector for the eastern district of Illinois to succeed Daniel Reese, who died recently. Mr. Reese had held the office 26 out of the last 31 years.

### INDIANA

The Eagle Coal and Mining Co. and the J. K. Dering Coal Co. have been made defendants in a suit brought in Superior court in Terre Haute by Mary A. Collins, Clifford Collins, Clarence Collins and Clara House who claim \$10,000 damages, alleging that the defendants have mined coal too near the surface of their land so that the foundations of a house, a barn and other buildings have been undermined and a well was drained.

The tippie at the Thomas mine, near Brazil, recently was destroyed. The Brazil fire department tried to save the structure, but the entire top plant is virtually a total loss.

Trial of Bruce Rogers, superintendent of the Kings mine, near Princeton, operated by the Deep Vein Coal Co., charged with firing shots in the mine in an unlawful manner, has been set for Oct. 1 in the Gibson County Circuit Court. The case is attracting considerable attention in Indiana mining circles as it is being prosecuted under the recently passed "shotfiring" law. One hundred and twenty indictments were originally returned against Rogers, but 60 of these have been quashed by Circuit Judge C. A. Smith, who will sit in the case.

### KANSAS

The Bureau of Mines safety department will conduct an intensive drive in safety work in the coal mines of southeastern Kansas during the next three or four months. Vernon Allison, associate chemist of the department reached Pittsburg, Aug. 26, to give lectures and demonstrations to the miners in advance of J. J. Forbes, of the safety extension service of the Bureau of Mines, who directs the campaign.

Not only the team from Western Coal & Mining Co. mine No. 20, which won the Kansas State first-aid and rescue meet, but also the Jackson-Walker Coal & Mining Co. team which won second place, will attend the international meet in Springfield, Ill., Sept. 10 to 12. A fund was raised in advance of the state meet to send the winning team and since then a purse has been made up to defray the expenses of the second team, which will motor to Springfield.

An attempt to wreck the steam shovel of the Dunkirk Coal Co. near Mulberry early in the morning Aug. 23 was frustrated when an employee noticed the odor of smoke and upon investigating found that it came from two burning fuses leading to a box containing

125 sticks of dynamite. He rushed from the pit and called an officer. When they reconnoitered a little later the fuses had ceased to burn before reaching the dynamite. Bloodhounds unhesitatingly picked up a trail to the house of Walter B. Greek, who was employed at the mine. A fingerprint expert from the Pittsburgh police department asserted that prints made from Greek's hands corresponded with those found on one of the sticks of dynamite. A few days before, Greek was reprimanded for being slow.

### KENTUCKY

Lonnie Jackson, Mayor of Central City, who resigned as president of District 19, United Mine Workers, in 1924, because he was not in sympathy with the Jacksonville-agreement strike in western Kentucky, has resigned as mayor of his city, effective Aug. 21, in order to give his entire attention to his real estate and other ventures.

A deal is pending by which the Harlan Coal Co., of Louisville, may take over the mines and equipment of the Letcher Coal Mining Co., at Elsie-coal, on the Louisville & Nashville R.R., nine miles from Whitesburg. The Letcher operation has been in litigation for some time, and was to have been sold at court house door some weeks ago, but the sale was postponed.

Although there has never been any agreed settlement of the strike in western Kentucky, which was called on April 15, 1924, the field is running freely, with plenty of labor available, and majority of miners back at work, the strike having been a losing proposition for the union. While it cost operators a good deal of money, the situation in the field today is better than for a long time past.

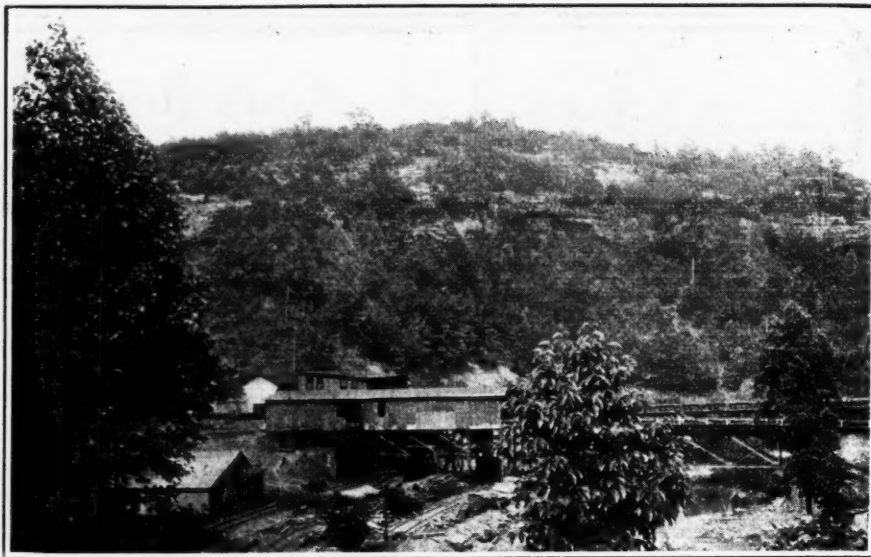
The West Kentucky Coal Bureau, composed of the western Kentucky operators, and principally interested in handling traffic matters, will meet at the Seelbach Hotel, Louisville, Sept. 8, this being the first meeting since spring. There was a suspension of meetings over the hot weather.

Philip C. Watson, who has been with his father, R. A. Watson, in the R. A. Watson Coal Co., jobbers and retailers, of Louisville, has gone with the Blue Diamond Coal Sales Co., as resident sales agent in Michigan. His headquarters are at Grand Rapids.

A. H. Stepp, formerly manager at Louisville for the Southern Coal Co., has joined the Hawley McIsaacs Co., at Madisonville, to help in that company's big stripping project.

### MONTANA

The Montana miners are taking a hand in a buy-Montana-coal campaign of publicity now going on. The United Mine Workers district organization estimates that 500,000 tons of coal are imported into Montana every year, enough to represent the full-time output of the Red Lodge group of mines for 190 days.



Barthele, or No. 1, Mine, Stearns Coal & Lumber Co., Barthele, Ky.

Coal is brought to the tipple from both sides of this picturesque hollow. Note how the hills are capped with many feet of solid sandstone.

### OHIO

The Blackstone Coal Co., at Rutland which took over the former No. 4 Maynard Coal Co. mine, the tipple and power houses which were recently burned, has reopened the property after an idleness of two weeks. Only mine run is loaded. The company has purchased complete equipment for its tipple including shaker screens, picking tables and loading booms which will be installed soon.

Work has been resumed at the mine of the Central West Coal & Lumber Co., located at Jacksonville. The mine has been idle for about six months following the burning of the tipple. At the time of the destruction the company had installed loading machines which had been operated successfully. The machines are again in use.

### PENNSYLVANIA

The Duquesne Light Co., subsidiary of the Philadelphia Co., has awarded a contract to the Dravo Construction Co. for the sinking of a new mine shaft at the Harwick mine, Rural Ridge.

The possibility of a strike in the hard coal regions had the effect of stimulating buying from central Pennsylvania hence the production there increased. The loading for the week ending Aug. 22, were 15,825 cars as compared with 13,519 cars for the week ending Aug. 15. The August loadings to and including Aug. 22 were 42,001 cars, compared with 37,054 cars for the same period in July.

Cambria County coal operators somewhat ironically thank the Interstate Commerce Commission for doing so much as to mention bituminous coal, especially low-volatile coals, as a "substitute" for anthracite fuel. Operators declare: "Bituminous coal runs the workshop of the world. It runs nearly everything west of New York. It runs New York, too, railroads, ships, electric light and power plants. About the only thing it doesn't do is supply heat

for residences through cellar heaters." They claim that Cambria County coal goes in a steady stream to Edison Electric and other big New York plants. It keeps freight moving. It is not a substitute for anything, though there may be some substitutes for bituminous coal.

Men at the Kinloch mine of the Valley Camp Coal Co. at Parnassus, who six weeks ago, entered an agreement with officials of the company to forego wages for that period, have been paid, and all is happy. The mine continues in operation.

The Carnegie Steel Co. is offering, through outside selling agents, 1,000 tons of Clairton byproduct nut coke daily, which it expects to sell largely in the east where buying is expected to be stimulated because of the anthracite tie-up. These selling agencies are offering the coke to dealers in the east at \$4.50 f.o.b. Clairton. The coke is all one size,  $\frac{3}{4}$  x 2 in., and is sold because it is too small to be used in the blast furnaces.

The No. 4 mine of the Stineman Coal Co. at South Fork which was closed down on July 1 resumed work Aug. 24, but is not being operated to capacity. It is also reported that the company may soon reopen its No. 1 mine.

The Saxman Coal & Coke Co., Derry township, near Greensburg, has purchased approximately 125 acres of coal adjoining the Peanut plant of the company from the Latrobe-Connellsville Coal & Coke Co.

Through stock purchase, the Pennsylvania R.R. has acquired the Western Allegheny R.R., a coal line 47.8 miles long which runs from West Pittsburgh, near New Castle, to the North Penn Coal Co. mines at Kaylor, Pa., near the Allegheny River. The railroad was owned by interests identical with the North Penn Coal Co., and it is understood the stockholders benefited by the transaction.

The United States Engineer's office at Pittsburgh in issuing a report on ton-



nage for July showed that there were moved on the Monongahela River, 1,384,368 tons of coal and 101,502 tons of coke; on the Ohio River in the Pittsburgh district, 302,940 tons of coal and 37,800 tons of coke, and on the Allegheny River, 16,400 tons of coke.

### SOUTH DAKOTA

The Dakota Feldspar Co., of Rapid City, is opening a new coal mine 17 miles northeast of Hot Springs. This mine is in connection with a mine of berylmica, the lode of the latter mineral having furnished the incentive for previous coal development when feldspar had intrinsic value.

### UTAH

The Carbon County coal mining officials and others accused of lynching a negro miner in June who brutally murdered the Castle Gate town marshal, have not been indicted by the grand jury which examined 120 witnesses. It was declared no satisfactory evidence connecting the men with the lynching of the murderer could be obtained. The district attorney announces that he will prosecute the men in another way later. In the meantime, the defendants are heros throughout the coal mining camps of Carbon County.

F. N. Cameron, vice-president of the Utah Fuel Co., of Salt Lake City, has returned from a three months tour of Europe, accompanied by his wife and daughter, Myra.

Twenty-nine persons were killed in Utah coal mines during the year ending June 30, according to the report of the State Industrial Commission. All but two of the accidents occurred underground, eleven of them being due to falling coal. There were twenty-seven permanent partial injuries during the same period, falling coal being the cause of one-third of them.

A bulletin just issued by the U. S. Bureau of Mines says that during the

decade ending Aug. 31, 1923, 1,078 net tons of coal was mined in Utah per man, basing the figures on all employees engaged in coal mining. The average for the nation during the same period was only 743, according to the report. The daily output per man in Utah was stated to be 6.7 net tons of coal, compared with but 4.3 tons for the national average.

Moroni Heiner, vice-president and, until a short time ago, also general manager of the United States Fuel Co., says Utah has 46,000,000,000 tons of recoverable coal, and that there are nearly 15,000 square miles of workable coal in the state. He said that about one-half of the coal produced in the state is used for domestic purposes. There were said to be 5,353 men employed in coal mining in the state on an average for the year ending June 30, 1924, with a payroll of \$9,160,937, \$1,711.36 being the earnings of an average miner for the year. The average price of coal per ton at the mines was given at \$2.89 in 1923, the entire output being worth \$13,657,000.

### WEST VIRGINIA

With the mines along the Monongah Division of the Baltimore & Ohio R.R., loading 1,034 cars of coal in the week ended Aug. 22, a new weekly figure for the 1925 lake shipping season was reached. The previous peak loading of the season was in the week ended Aug. 8, when 991 cars were produced.

Due to the heavy movement of anthracite the eastern railroads obtained more bituminous coal for use on their roads from the Fairmont region. In the six weeks preceding Aug. 22, the mines along the Monongah Division of the Baltimore & Ohio R.R. loaded 7,939 cars or 396,950 net tons of railroad fuel. Approximately 60 per cent of this coal was obtained by the foreign carriers.

In the Monongalia circuit court recently Judge I. Grant Lazelle of Morgantown, issued a temporary injunction

restraining the Connellsville By-Products Coal Co. (J. A. Paisley interests) and the Cochran Coal & Coke Co. from mining coal in their Pittsburgh seam lying under the main headway of the Sewickley seam of the Continental Coal Co. in Scott's Run. The first application for a restraining order was made Aug. 11.

The following West Virginia coal companies have gone out of business through a surrender of their charters to the secretary of state: Blue Flame Fuel Co., Raleigh Smokeless Coal Land Co., Logan Mining Co., Main Island Coal Corporation, Block and Gas Coal Mining Co., Eastern Utilities Coal Co. The North American Coal Co. and the Beckley Pocahontas Coal Co. have been dissolved by a decree of court.

The Hillman Coal & Coke Co., a Pennsylvania corporation has been authorized to do business in West Virginia.

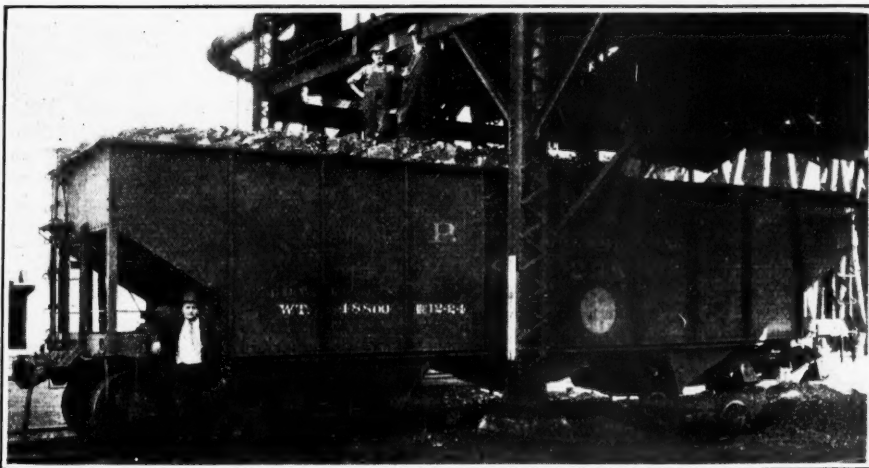
Preparations are being made for the annual first-aid meet of the New River Co. which is to be held Sept. 26. The New River company was the first in West Virginia to adopt the "Hundred per cent mine safety" slogan. The meet will follow the general plan of the first-aid meet at Holden held by the employees of the Island Creek Coal Co. last month. D. J. Parger, of Pittsburgh, chief engineer, mine safety service, Bureau of Mines and several other officials of the Bureau of Mines will attend the meet.

After working on an open shop basis one year, miners employed at Eagle mine of the Clark Coal & Coke Co. near Hepzibah, Harrison County, celebrated the event by holding an outing on Aug. 22. A program was rendered. The mine worked 309 days and loaded 5,607 steel hoppers. There were 28 acres of coal or 280,552 tons of coal mined. The company claims that no other mine in the state worked that many days in a year.

John F. Phillips, president of the Delmar Coal Co., of Fairmont, has signed contracts with the Metropolitan Life Insurance Co. which provide for his employees group life insurance totaling approximately \$115,000, in addition to health and non-occupational accident benefits. The policies were written on a co-operative basis, the employees sharing the cost.

W. M. Rowan, of Grafton, who was vice-president of sub-district 3 of District 17, United Mine Workers, was recently elected as commissioner by the miners employed by the Consolidation Coal Co. under the company contract plan and the 1917 wage scale. Another commissioner is to be chosen to represent the company. The name of Tom Lewis, who was once international president of the United Mine Workers of America, is mentioned, although no selection was made from last reports.

The Hardy Coal Co., with plants in the Thacker district of West Virginia on the Norfolk & Western Ry., is soon to issue \$750,000 in 10-year 7 per cent notes redeemable in whole or in part any time at 101. It is announced that with each \$1,000 note, five shares of stock will be given, the price of both



First Car of 1917-Scale Coal from Pittsburgh District

This car was loaded at Banning No. 2 mine of the Pittsburgh Coal Co. at Whitsett Junction, Pa., on the Pittsburgh & Lake Erie R.R., 43 miles from Pittsburgh. The car holds 70 tons and was loaded Saturday, Aug. 22. Standing on the track beside the car is William Lauder, division manager, Pittsburgh Coal Co., in charge at Banning. The mine had opened at the request of the men on Aug. 20 with 36 men. The next day 89 were on the job. On Aug. 24 another mine in the Pittsburgh district opened on the same basis and the movement was spreading.

to be \$800. That will mean \$600,000 for the \$750,000 notes, plus 3,700 shares of stock. The proceeds from the sale of notes will be used to liquidate all floating debts and to purchase additional equipment to enable the company to increase its production. This company hopes soon to reach a monthly production of 60,000 tons. In July, the Hardy Coal company produced 45,000 tons that proving to be a record month. The issue of \$750,000 notes has been subscribed.

Coal operators interested in the \$100,000,000 Flint merger were called to New York City last week for conferences, which were conducted by Bickmore & Co. and A. H. Flint & Co. with individual companies. The general belief is that the merger will be consummated soon. There are twenty-four coal companies included in setup No. 1.

Thomas W. Arnette, president of the Antker Coal Co., has returned from a two months' trip to Colorado and the Pacific Coast. Mr. Arnette attended the triennial session of the Grand Encampment of the Knights Templars of the United States in Spokane, Wash., recently.

The Bethlehem Mines Corporation, operating mines at Barrackville and Dakota, has ordered a large number of roller bearing mine cars, which constitute somewhat of an innovation in northern West Virginia territory. Other large orders for cars have been placed by the New England Fuel & Transportation Co. The Everettville mine of the New England company has broken all its own records recently for the production of coal. This mine has exceeded 800-mine cars output per day.

A survey being made by engineers of the Chesapeake & Ohio Ry., up Glade Creek is thought to presage the development of coal and timber land in Richmond district of Raleigh County.

The mines of West Virginia took a toll of 37 lives in the month of July, twenty deaths being due to fall of roof, coal and slate. Mine car accidents were responsible for six fatalities, motor accidents, three, mining machines, five and electrical shock three. All of the fatal accidents occurred inside the mines. McDowell County mines led in the number of accidents, seven occurring in that county. In Logan there were five fatalities and in Fayette four. Three fatal accidents occurred in Monongalia and two each in Marion and Mingo Counties. One death occurred in each of these Counties: Barbour, Brooke, Boone, Grant, Greenbrier, Harrison, Kanawha, Marshall, Mercer, Preston, Raleigh, Taylor, Upshur and Wyoming.

The Costanzo Coal Mining Co. of Wheeling has leased a part of the old Nichols farm from Albert Schenk and others of Wheeling for the purpose of mining coal. Royalties on the coal mined will be paid as consideration for the lease.

It is the intention of the purchasers of the Smith Pocahontas Coal Co. to reopen the mine of that company in about a month. The property and assets of the company including a plant near Mullens in Wyoming County on

the main line of the Virginian were recently sold at public sale and bid in by J. C. Pack, of Bramwell. In preparation for the reopening of the mine, prospectors are making tests for new entries. Before closing down last January the company encountered rock in such abundance that profitable mining of the seam was out of the question.

Justus Collins, president of the Smokeless Fuel Co. of Charleston and also head of a number of large coal producing properties in West Virginia and Kentucky, has completely recovered from a protracted illness of several months and is able to be at his desk again.

## CANADA

The government of Nova Scotia has requested the British government to appoint a chairman to head the commission which will soon be established to inquire into the coal industry of the province, in accordance with the terms under which the Cape Briton strike was settled.

The strike of coal miners in the Edmonton field was terminated on Aug. 23 when a meeting of miners held at Beverly voted by a small majority of the 125 men voting to return to work on the terms of the operators. The reduction in wages amounts to 13 per cent for contract rates and 5 and 10 per cent for company and day men. Work was to be resumed on Aug. 26.

Prof. W. C. Worcester, of the University of Saskatchewan, who was in charge of carbonizing and briquetting tests of Canadian lignite coal in Germany, has returned to Canada and reports that the tests have been technically successful. The work was carried on for two summers at two of the largest briquetting plants in Germany. Fifty-two tons of lignite from the Western Dominion Collieries at Taylorton, Sask., were used in the tests.

With a full cargo of 2,200 tons of Welsh coal for the Welsh Anthracite Coal Co., of Toronto, the steamer *Knut* docked in Toronto a few days ago, having come direct from Swansea, Wales. This is the fifth vessel that has come overseas this season with coal for this company.

The Public Utilities Committee of Winnipeg, Man., has accepted the tender of the Harstone Coal Co. for the supply of 15,000 tons of Greenhill, Alberta slack coal at \$7.67 per ton, required for the central heating plant at Winnipeg.

Shipments of Alberta coal to Toronto over the Canadian National Rys. at a special reduced rate have been discontinued for the present to give the right of way to the movement of grain. When this is over they will be resumed until the full amount of 25,000 tons of coal has been hauled.

The output of the Cape Breton mines is steadily increasing. On Aug. 18 the production of coal amounted to 11,266 tons. On Aug. 19 the number of men at work was 6,195, of whom 4,695 were underground. Mine No. 21 at Birch

Grove is permanently closed down and is being dismantled. The bank-head structure and machinery are being removed to No. 11 where a fire took place during the strike. The troops, with the exception of about 150 soldiers, have been removed from the district.

Production of coke in Canada during the month of July amounted to 89,221 tons, the lowest tonnage yet recorded for any month this year, and a drop of 19 per cent from the output of 109,694 tons in June. This decline was largely due to the strike among the coal miners in Nova Scotia. Ontario ovens produced 51,903 tons or 58 per cent of the total production in Canada. Imports of coke in July totaled 55,542 tons as compared with 55,836 tons in June while exports dropped to 1,683 tons from 3,567 tons in the preceding month. For the seven months ending July, 325,470 tons of Canadian coal and 900,579 tons of imported coal were converted into 803,068 tons of coke. During the same period Canada imported 396,598 tons of coke making a total supply of 1,199,666 tons of which 27,735 tons was exported leaving 1,171,931 tons available for consumption in Canada.

## Traffic

### To Hear Carriers Next Week

The Interstate Commerce Commission has announced that at the Sept. 8 hearing in Chicago, Ill. on ex-parte 87 and Docket No. 17,000 which provides for a general freight rate adjustment in the Midwest including an increase of 15c. on coal, the time will be too limited for the presentation of direct evidence by shippers and the public. Instead there will be a further hearing for them at a later date. Carriers and associations of security holders will be heard only.

Dismissal of the complaint of the Fifth and Ninth Districts coal traffic bureau attaching rates on coal from mines in the Belleville district of Illinois to Kansas City, Mo., and other western points is recommended in a report submitted to the I.C.C. by the examiner.

A new regulation of the New York Central R.R., approved by the New York Public Service Commission, provides that switching charges of connecting lines at Buffalo, N. Y., will be absorbed on coke, carload, having road haul via New York Central, but not to exceed 38c. per ton (net or gross as rated). Effective Sept. 15, 1925.

## Obituary

David T. Evans, at one time a coal operator in the Kanawha field, died suddenly late in August at Huntington, W. Va. For a number of years Mr. Evans was one of the operators of the Mount Carbon Co., Ltd., Powellton, W. Va. Several years ago, however, he disposed of his interests in the Mount Carbon company and in the Cabin Creek Consolidated Coal Co., in which he was a director, and entered the oil refining business at Kenova. Funeral services were held in Huntington, where Mr. Evans was buried.



## New Companies

**The Putnam Coal Co.**, of Peoria, Ill., has been incorporated with capital of \$10,000 to mine and ship coal. The incorporators are Charles M. Putnam, Charles M. Putnam, Jr., and John Evers, Jr.

**The Fairfax Collieries Co.**, of Dorfee, W. Va., has been incorporated by C. H. Schafer and D. C. Prichard, both of McMechen, with a capital of \$500,000. The chief operations of the company are in the Henry district of West Virginia.

**The Carter Coal Co.** was incorporated in Madisonville, Ky., the first week of August, with a capital stock of \$30,000, by Jewel Avis, Coleman L. Jones and others.

**The College Hill Coal Co.**, of Jacksonville, O., has been chartered with a capital of \$22,000 to mine and sell coal in the Hocking Valley field. Incorporators are L. E. Holmes, C. D. Williams, William C. Hill, James Mackie and Albert Cannon.

**The New North Coal Mining Co.**, Springfield, Ill., has been incorporated with capital of \$50,000 to engage in the business of mining and selling coal. The incorporators are B. Schreiber, Charles H. Sutton and C. I. Schreiber.

**The Chelsea Coal Co.** has been organized and incorporated by L. E. Compton, W. O. Meyers and J. F. Dowis of Pittsburg, Kan., and J. A. Holland of Mulberry, Kan., to operate a steam shovel mine on a 600-acre lease near Chelsea, Okla. The sale of coal will be handled by the Security Fuel Co. which Mr. Holland and associates conduct with a sales office in Kansas City.

Organization of the **Ohio Valley Coal Co.**, with \$100,000 capital stock to engage in coal mining has been completed with several Indianapolis men as directors. The list includes Frederick M. Ayres, Clarence Stanley, Victor C. Kendall, Samuel Ashby, O. H. Stout, Sidney A. Stout and Thomas C. Mullins. Mr. Ashby, an Indianapolis attorney, said the company had not obtained coal properties at this time, but intended acquiring mines in the Ohio valley states within a few months.

**The Jefferson Block Coal Co.** has been incorporated at Jasonville, Ind., with a capital stock of \$6,000 to do a mining business. The incorporators are W.-Russell Johnson, Joseph Rogers and Henry Neal.

## Coming Meetings

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries.** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

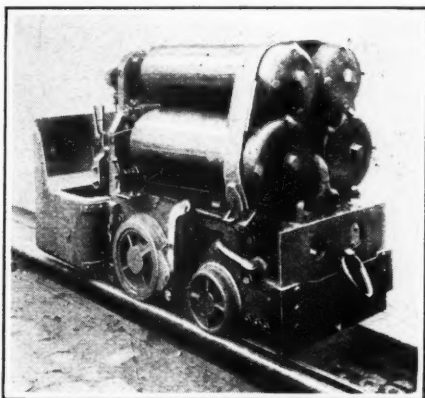
**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## New Equipment

### Compressed Air Locomotive Is a Midget

For certain uses or under certain conditions the compressed air locomotive is still employed. Where conditions in the mine dictate the use of this type of machine two varieties or weights have been in general use—the haulage motor and the gatherer. A third type or midget machine has recently been de-



#### Four Tanks Store the Energy

This machine is charged with air at the extreme pressure of 2,600 lb. It is intended for light work only, such as moving only a few cars at a time over comparatively short distances. It is safe in any mine atmosphere and can move over any track that will support a mine car.

veloped and placed on the market by Messrs. Demag, of Duisburg, Germany. This is about comparable in size and weight as well as in the service it is intended to render to the electric shuttler recently placed on the market in this country.

Chief dimensions of this German machine are as follows: Weight, empty, 2 tons; speed, 5 to 62 m.p.h.; capacity of air tanks, 7 to 9 cu.ft.; charging pressure, 2,200 to 2,600 lb. per square inch; pressure of air entering cylinders, 206 to 235 lb. per square inch; useful performance about 7½ ton miles per hour overall width 31½ in.; length, 79 in.; height 59 in.; length of wheelbase 20½ in.; distance traveled per charge of 2,200 lb., about 6,900 ft. or 1.13 miles; with 2,570 lb. of a charge this distance can be increased to about 8,500 ft. or 1.6 miles; normal power output, 4 h.p.; maximum power output, 6 hp.; normal drawbar pull, 339 lb.; maximum drawbar pull, 550 lb.

In the design of this locomotive it was the constant aim to keep all dimensions to a minimum. As a result this machine can be run onto the hoisting cage and moved up or down in the shaft with no more dismantling than the removal of the driver's seat. This is a light sheet-iron casing that may be easily attached or removed without interfering in the least with pipe connections operating levers or the like.

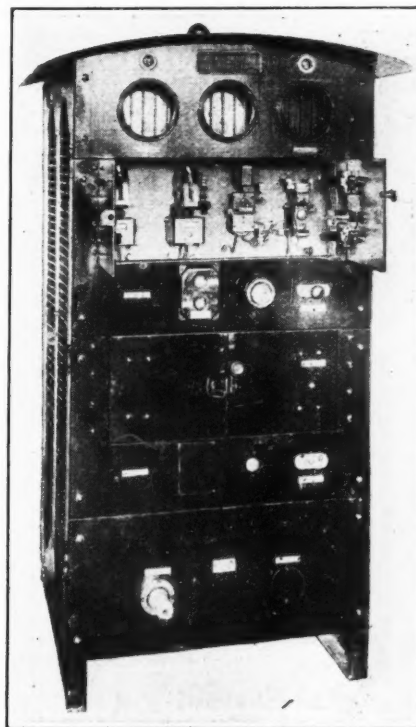
Because of this light and compact construction this machine may be em-

ployed on several different levels being transferred from one to the other by the regular mine cage. Again, in the event that heavy repairs become necessary it may be run onto the cage and hoisted to the surface where these repairs may be performed in the light of day. Furthermore, the machine is so light that it may be run to any part of the mine over any rail that is heavy enough to carry a loaded mine car. Even with its light weight, however, its drawbar pull is sufficient to haul eight to ten cars each weighing about 2 tons.

### Strongly Inclosed Battery Charging Panel

A specially designed and completely self-contained battery charging outfit is now in operation in one of the large anthracite mines in Pennsylvania to withstand the rough treatment to which underground equipment is often subjected. The outfit was built in the form of a switchboard panel by the General Electric Co.

The housing framework is made of machine steel, welded, with a missile-proof covering on back and sides of ¼ in. expanded metal grill, No. 13 standard gage. The roof is formed of a heavy plate of 0.156-in., stretcher-leveled steel, having the customary gentle roll for shedding water. An extra heavy I-belt is fastened through the roof to the framework to provide for



### Battery Charging Panel Built For Severe Service

Only authorized persons have access to the equipment in this inclosed cabinet. Even the meters are protected against tampering yet are visible at all times.

easy shifting of the equipment, by crane or handles, from one part of the mine to another.

A strong clip, suitable for a padlock, on the doors provides protection against meddling by unauthorized persons. The meters at the top of the panel are viewed through three portholes, protected by bars.

The doors of the upper section when opened expose the relays and contactors. The right-hand door carries a reset handle for the overload relay thus allowing the operator to reset the relay without unlocking the door.

A handwheel for the dial switch, a push-button station and a voltmeter switch are all mounted on the solid portion of the panel directly below the swinging doors of the upper middle section.

The electrical equipment, consisting of standard battery charging apparatus, is especially finished to prevent corrosion.

### Simple Priming Device Aids Centrifugal Pumps

To meet the demand for a vacuum pump suitable for use in priming the smaller sizes of centrifugal pumps, Barrett, Haentjens & Co., of Hazleton, Pa., has brought out the device shown in the accompanying illustrations. In outward appearance this much resembles the machines of a similar character previously developed by this firm. It is, however, small and simpler in its construction.

This pump is intended for use in conjunction with a vacuum breaker and, consequently, is of the dry type. As a result, water does not enter this machine, it requires little power, operating stresses are reduced to a minimum and the working parts are not subject to rust or corrosion. Its simple construction is of marked advantage when making inspections or repairs to any of the

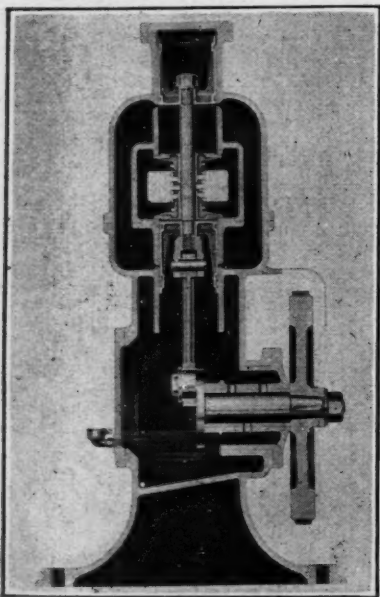


Fig. 1—Cross-Section of Priming Pump

This machine is intended for operation in conjunction with a vacuum breaker. Thus no water can find its way into the working parts, which consequently, are not subject to rust or corrosion. Lubrication is automatic.

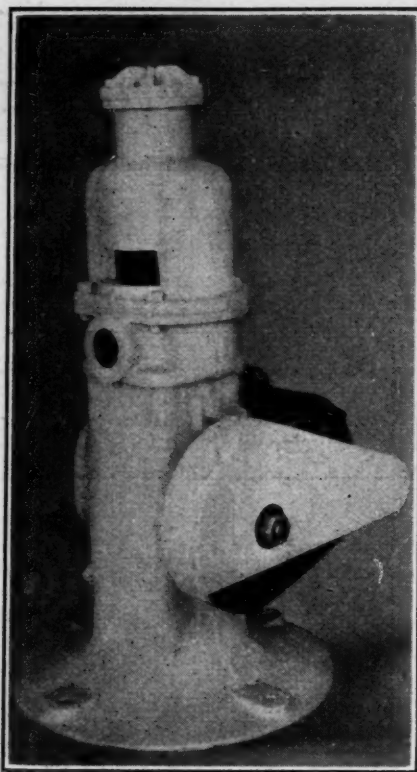


Fig. 2—Ready for Installation

This shows the self-contained priming unit ready to be set up and connected to the pump it is to serve. As may be judged from this illustration the floor space is small as is also the necessary head room.

internal working parts. The drive chain, as may be seen, is carefully guarded.

The manufacturer claims the following advantages for this new machine: The pump is a compact unit requiring little floor space or head room. Automatic lubrication of all moving parts conserves oil and reduces the amount of necessary attendance. The machine is built without inlet valves, air enters it through parts that are alternately covered and uncovered by the piston. Both exhaust valves are located at the ends of the cylinder, are seated by a single spring and are always visible. Such simplicity of construction makes for easy running and long life.

### Industrial Notes

The Cutler-Hammer Mfg. Co., Milwaukee, Wis., has purchased the business and patents of Payne Dean, Ltd. The Dean valve-control apparatus has always been manufactured by the Cutler-Hammer Mfg. Co., and they have recently also manufactured much of the other equipment sold by Payne Dean, Ltd., such as the auxiliary power plant apparatus. Mr. Dean and many of his associates are now connected with the Cutler-Hammer Mfg. Co. and will actively assist in the promotion of this work.

A contract for the construction of shaker screens and tippie equipment for the Dawson Daylight Co., Dawson, Ky., has been awarded the Earlington Machine Works, at Earlington, Ky. The Dawson concern operates a strip mine. Its tippie was destroyed by fire on July 21.

The Westinghouse Electric and Manufacturing Co. has received a \$500,000 order for electrical equipment from the Comal Power Co. of San Antonio, Tex., through the U. G. I. Contracting Co. The new plant is designed to use powdered coal. This enables the power company to use the low grade coal or lignite mined in that vicinity at a big saving.

The American Cable Co. has appointed the firm of Bruntons, Musselburgh, to handle its general line, including Tru-lay wire rope and Tru-loc fittings, in Scotland. The Dominion Wire Rope Co., Montreal, is a new Canadian distributor. Other new distributors are: The Marion Machine, Foundry & Supply Co., Marion, Ind., J. Shuman Hower, 106 Foster Bldg., Utica, N. Y., The Contractors Equipment Co., 8 Steuben St., Albany, N. Y., and John C. Louis, 221 S. Eutaw St., Baltimore, Md.

Clarence L. Cook has joined the sales organization of the Fairmont Mining Machinery Co., after having been with the Pittsburgh Coal Washer Co.

J. V. N. Dorr, president of the Dorr Co., arrived on the Olympic, Aug. 26, after spending two and one-half months in Europe in connection with European business of the company.

### Trade Literature

**C-E Air Heater.** Combustion Engineering Corporation, New York City. Catalog A H-2. Pp. 14; 8½x11 in.; illustrated. Describes the construction, operation, performance and applications of this heater.

**Reilly Oil Heater.** The Griscom-Russell Co., 90 West St., New York City. Form 402. Leaflet describing and illustrating how this apparatus uses live steam to provide the proper degree of preheating of oil for thorough atomization at the burners.

American Blower Co., Detroit, Mich., has issued Bulletin No. 3506 on "ABC" Steel Plate Exhaust Fans. The bulletin has 25 pp., 8½x11 in., with illustrations and tables. The company also has issued a 4x7-in. bulletin superseding Price Book 1129 and Price Book 1129-A, containing prices and information on electrically driven fans and blowers for exhausting, blowing, ventilating, drying and cooling.

Pennsylvania Pump & Compressor Co., Easton, Pa., recently issued Bulletin No. 122, describing its Aftercoolers; No. 123, describing its Class 3-A and 4-A Air Compressors and class 7-A and 8-A on Vacuum Pumps; Bulletin 124, describing its Portable Air Compressors. These bulletins are 8½x11 in., illustrated.

The Venturafin Method of Heating is the name of an 8½x11-in. book issued by the American Blower Co., Detroit, Mich. The book is well illustrated, showing the different installations where the Venturafin method has been installed.

The C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., has issued a new and revised edition of its catalog on Automatic Controllers for temperature, pressure, humidity, liquid level, condensation, etc. It contains 84 pp. and is well illustrated.

Anchor Rerollers. T. H. Edelblute Co., Pittsburgh, Pa. A four-page folder describing and illustrating the installing of the rerollers at coal mines, metal mines, etc.

The Air-Lift Method of Pumping Water by Compressed Air. Pennsylvania Pump & Compressor Co., Easton, Pa. Bulletin No. 118. Pp. 12; 8½ x 11 in.; illustrated. A discussion of the air-lift method, with tables.

Jeffrey Belt Conveyors. The Jeffrey Mfg. Co., Columbus, Ohio. Catalog No. 409. Pp. 52; 7½ x 10½; illustrated. Contains descriptions of various types of standardized belt conveyors for use in practically every industry where loose materials or packages are handled.

Uehling Vacuum Recorder, Type D. Uehling Instrument Co., Paterson, N. J. Bulletin No. 140. Leaflet describing the construction and working of the recorder which operates on the mercury-column principle and employs no moving parts, springs or diaphragms.

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. recently issued its new 1925-27 catalog of electrical supplies containing 1,200 pp. and well illustrated. Includes all new apparatus designed and manufactured in the past two years, as well as all previous types, brief descriptions of the company's industrial motors and controllers, power and marine equipment, large switchboards and oil circuit breakers and railway supplies. The book contains a complete subject index, style number index for checking invoices, classified index and thumb index which enables the user to locate any section of the catalog.

S. Flory Mfg. Co., Bangor, Pa., recently published Catalog No. 31, containing 72 pp.; 6 x 9 in.; illustrated. The catalog is devoted exclusively to Flory holsting machinery for construction and material handling operations.